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WEEKLY NEWSPAPER FOR THE FARM CHEMICAL MANUFACTURER, FORMULATOR AND DEALER
Published by The Miller Publishing Co., Minneapolis, Minn.

Accepted as Controlled Circulation Publication at Minneapolis, Minn. NOVEMBER 19, 1956 Subscription Rates: \$5 for 1 year, \$9 for 2 years No. 47

Farmers to Vote On Acreage Allotment Referendum Dec. 11

Either Rejection or
Acceptance Could Aid
'57 Plant Food Sales

By JOHN CIPPERLY
Croplife Washington Correspondent

WASHINGTON, D.C. — This week the U.S. Department of Agriculture threw all its influence behind the soil bank program in the forthcoming corn price support referendum which will be held in the commercial corn area on Dec. 11, 1956. The influence is heavily weighted on the cash disbursement side for those farmers in the commercial corn area who will vote to go along with the soil bank for the crop years 1958-59.

For the plant food industry, this decision emphasizes a corn acreage of 51 million acres for the three years. To be eligible for soil bank payments in the corn area, it will be required that corn farmers reduce corn acreage by 15% for the purposes of the corn acreage reserve program, or to cooperate in the conservation reserve program of the soil bank. This will require an equivalent contribution of land to the soil bank, but compensation for land contributed will be considerably less than the acreage reserve aspects of the soil bank program, it is pointed out.

For the plant food industry this can only mean that the soil bank, now currently favored and probably to be aggressively promoted by USDA in the weeks before the referendum, will provide a decidedly favorable climate for the

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Stress Laid On Extra Sales Efforts at California Fertilizer Assn. Conference

By DONALD NETH
Croplife Managing Editor

CORONADO, CAL. — A forecast that fertilizer consumption in the U.S. will reach 32½ million tons by 1965 and 40 or 41 million tons by 1975 was sounded at the 33rd annual meeting of the California Fertilizer Assn., held at Hotel Del Coronado here Nov. 11-13.

Those estimates were given by Dr. Philip Neff, Planning Research Corp., Los Angeles, and they were based on a forecasting system involving a correlation between fertilizer consumption and gross national product.

Convention attendance was about 600, which would at least equal last year's record turnout, according to Sidney H. Bierly, general manager of the association.

The convention was a well-knit

affair, which included several talks, an interesting panel session, the annual association business, shop talk and fun in this Southern California play land.

Dr. Neff made his challenging estimates during a Nov. 12 luncheon talk on "Costs, Markets and Prospects in the Fertilizer Industry."

He said that some of the critical, and at times limiting, factors in the industry were high capital costs in relation to sales, a large materials handling problem, the extreme importance of capital equipment and its relation to costs of operations and the rapidly changing industry technology and markets.

To point up the materials handling problem, Dr. Neff said that the industry was handling on a cumulative basis a weight of material 12 times the weight of the fin-

ished product. To make his point about the importance of capital equipment, he said that in mixing among large and medium producers, the man hours required to produce a ton of fertilizer varied from 4.8 to 9.2. The same range applied to packing and shipping costs. He said that the behavior of firms of about the same size and producing the same products varied greatly.

Because of all these factors, Dr. Neff said, there is a premium on foresight in the industry, a premium which involves both conduct of research and knowledge of future markets.

Dr. Neff said that the three most important variables on which future markets depend are present farm income, future farm income and the difference between farm income and farm costs, other than fertilizer.

He said that there has been a historical correlation between fertilizer consumption and gross national product, which he defined as the amount currently being spent in the U.S. for goods and services. He said that knowing the gross national prod-

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Pacific Plant Food Group Sees Large Market Potentials Ahead

HARRISON HOT SPRINGS, B.C. — The Pacific Northwest Plant Food Assn. heard a sum-up on the possible effects of the soil bank and a review of the work of the state departments of agriculture of the area, and got a look ahead at some long range market goals during its seventh annual convention, held Nov. 7-9 at Harrison Hot Springs Hotel here.

A record attendance of 201 registrants was on hand for the sessions, held in a picture-postcard setting here in British Columbia.

The opening session got under way with brief remarks by Frank Meeker, Meeker Fertilizer Co., Salem, Ore.,

association president; Robert Allard, Wilbur Ellis Co., Seattle, general convention chairman, and Lee Fryer, the Chas. H. Lilly Co., Seattle, chairman of the program committee.

Dr. E. R. Jackman, U.S. Department of Agriculture agronomist from Corvallis, Ore., gave a sparkling talk on "Deposits in Your Soil Bank," which he set against the background that the land, in some manner or other, supports everybody.

He said that we now have in the U.S., some 40 million acres of land that are not needed for production for the present population. Some 15% of the land formerly was required to support horses, he said, and soil and plant science, along with farm machinery, also have freed much of the land.

In commenting on what these new tools of agriculture are doing, he said that 2,4-D and its relatives have increased wheat yields by an average of 6 bu. an acre in the Columbia Basin in Oregon.

Dr. Jackman reviewed some of the

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Production Begins At Belgian Congo Pyrethrum Plant

NEW YORK — The Belgian Congo's first pyrethrum extraction plant, Chimiphar, at Bukavu, has started production under the direction of Alois Saelens, its builder and owner, who is now in the United States. His objective here is to confer with American pyrethrum processors who depend on African pyrethrum for their supplies.

Mr. Saelens states that he is prepared to extract pyrethrins, the active ingredient of pyrethrum flowers, from 2,700,000 pounds of the blossoms a year.

The United States imports virtually all of its pyrethrum requirements from either British East Africa or the Belgian Congo. The Chimiphar plant at Bukavu is located close by the pyrethrum growing area.

Extraction of pyrethrins from the pyrethrum flowers at the point of growth makes unnecessary the shipment of an equivalent amount of baled flowers and thus greatly reduces shipping costs, it is pointed out.

Mr. Saelens' venture at Bukavu represents a pioneering effort involving both the problems of assembling a highly complicated plant in the heart of Africa and the training of natives to operate it.

As one detail of his planning, housing and facilities had to be provided for 35 families of his working force, on a site that only recently was a forest of wild banana trees.

ASA Panel Seeks Way to Bring Fertilizer Use in Line With State Recommendations

CINCINNATI, OHIO — The 48th annual meeting of the American Society of Agronomy, with the Soil Science Society of America, the Crop Science Society of America, and the Agronomic Education Division, met at the Netherland-Hilton Hotel here Nov. 12-15. Papers presented at the convention covered many phases of soil fertility, physics, conservation, and genesis, as well as a special panel on how to narrow the gap between recommended fertilizer practices, and actual use.

Prof. A. J. Ohlrogge, Purdue University, presided at the Nov. 13 session on soil fertility which reported on the results of experiments with trace elements on various crops.

A paper by three University of Wisconsin agronomists reported on the effects on corn caused by a deficiency of boron. The authors, K. C. Berger, Toivo Heikkinen and E. Zube, told about their tests, saying that

they had transplanted field corn to jars containing various nutrient solutions. One set of plants was grown for each of 3-, 6-, and 9-week periods at each of the 0, 0.01, 0.05, and 0.25 ppm. boron levels, after which the boron was removed from the solution. One set of plants at each boron level received boron to maturity. All other nutrients were maintained at adequately balanced levels, they reported.

Plants grown without boron did not produce ears and severe deficiency symptoms were present. Plants grown at the 0.01 and 0.05 ppm. boron level either did not produce any ears or only very poorly developed barren ears depending on the length of time in the boron solution. Plants grown in the 0.25 ppm. conc. did not produce fully developed ears unless allowed to remain in the boron solution to ma-

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Illinois Custom Spray School Set for January

URBANA, ILL.—The 1957 insect outlook, latest insect control methods and new agricultural chemicals are among the long list of topics for the ninth Custom Spray Operators' School to be held at the University of Illinois, Jan. 24-25, 1957. All sessions will be held in the Illini Union on the campus.

H. B. Petty, extension entomologist in charge of the school, says all custom spray operators, agricultural chemical salesmen, dealers and other interested persons are invited to attend.

During each session, time will be set aside for questions from the audience. Participating in the school will be staff members of the college of agriculture and entomologists of the Illinois Natural History Survey. In addition, several guest speakers will take part in the program.

Headline topic on the program on Thursday, Jan. 24, will be the corn borer situation. Results of the fall survey of overwintering corn borers, timing applications of insecticides and experiences of researchers and farmers with control methods will be covered.

Other subjects on the first day's program will include weed control on corn, use of soil sterilants, control of Johnson grass, wild garlic and Canada thistle; use of liquid fertilizers and equipment for mixing and applying; care and adjustment of sprayers; equipment for band spraying; and the spotted alfalfa aphid and its control.

On Friday, Jan. 25, discussion will include pre-emergence weed chemicals, ten years of commercial brush control, new herbicides, more information on chemical residues, progress with soil insecticides, 1956 results in controlling giant foxtail and controlling weeds in soybeans.

CSC and Gas Firm May Form New Company to Make Petrochemicals

NEW YORK—An agreement between Commercial Solvents Corp. and the Columbia Gas System, Inc., made last week, was the go-ahead signal for the two companies to proceed with engineering and economic studies of a proposed joint project to produce petrochemicals. The announcement was made jointly by J. Albert Woods, president of CSC and George E. Young, president of Columbia.

The \$40 to \$50 million project, which would be located in the Ohio Valley area, has been under investigation during recent months jointly by the two companies. Tentative plans call for the commencement of construction early in 1957 after necessary regulatory authorizations have been obtained.

The long range plans for the project provide for the formation of a jointly owned company and recognize the possibility that the new company may ultimately be engaged in the entire field of ethylene and other hydrocarbon derivatives.

The joint project is based on the utilization of hydrocarbons to be extracted from the substantial reserves of natural gas owned or controlled by Columbia Gas in the Appalachian area and will draw upon the technological and chemical marketing experience of Commercial Solvents.

AGRONOMIST NAMED

PULLMAN, WASH.—Dr. Thomas J. Muzik has been appointed associate professor and associate agronomist in the Washington State College agronomy department, Dr. B. R. Bertramson, department chairman, announces. He succeeds Dr. L. W. Rasmussen, now assistant director of the college's agricultural experiment stations.



Darl E. Snyder

Diamond Appoints New Eastern Representative

CLEVELAND, OHIO — Appointment of Darl E. Snyder as eastern district manager of Diamond Black Leaf Co., has been announced here by George V. Dupont, general manager.

Mr. Snyder, who already has taken over his new assignment, will supervise the merchandising and sale of Black Leaf agricultural chemicals in a 14-state area from Miami to North Carolina. He will make his headquarters at the company's eastern sales office in Lancaster, Pa.

A native of Iowa, born at Humston and raised near Algona, Mr. Snyder comes to the Diamond Black Leaf organization from Standard Chemical Co. (Indiana), Chicago, where he supervised technical sales and service work on agricultural, household and garden chemicals. He has been associated with Standard since April 1947.

Mr. Snyder was graduated in 1927 with a B.S. degree in horticulture from Iowa State College, Ames.

Radio Waves May Keep Insects Out Of Storage Bins

MOSCOW, IDAHO—There may come a time when radio waves will keep bugs out of grain bins.

Researchers of the U.S. Department of Agriculture are experimenting with high frequency radio waves as a means of keeping insects out of grain bins, H. H. Walkden, who works with the USDA stored products laboratory, reported at a Pacific Northwest grain sanitation short course at the University of Idaho.

Means are being found of putting insect-free grain into storage and keeping it that way, Mr. Walkden said. "At times the impression has been conveyed that no good control measures have developed and that a deplorable situation confronts us. That is not the case."

The insect problem in stored grain would become a minor one, Mr. Walkden said, if all warehousemen used the present known methods of insect control.

COTTON MEETING SET

MEMPHIS, TENN.—The 1956 Western Cotton Production Conference will be held March 4-5, at the Hotel Westward Ho, Phoenix, Ariz., according to an announcement by Emmett Robinson, office of public relations, National Cotton Council of America. The meeting was originally scheduled to be held a day later but was shifted because of a conflict with another meeting, Mr. Robinson said. The change in date does not affect the dates for the annual Beltwide Cotton Production Conference set to be held in Birmingham, Ala. Dec. 13-14, it is emphasized.

Grassland Farming Called Most Important Crop by Mississippi Convention Speaker

BILOXI, MISS. — "Grass is the most universal and important crop in the world," remarked W. R. Thompson, extension agronomist, for Mississippi State College, at the Mississippi Fertilizer and Agriculture Workers convention, held at the Buena Vista Hotel, Biloxi, Miss., Nov. 1-2-3.

Mr. Thompson has recently returned from a trip through nine European countries where he studied the quantity and quality of grass and all there.

"Europe is really beginning to build again. They love to work, or they wouldn't work as hard as they," he said.

"There is much fertile soil in Europe, and the farmers there are taking advantage of it," he stated.

Mr. Thompson remarked that he was particularly impressed while traveling through Belgium and Holland. "Everyone was very friendly and helpful," he concluded.

Dr. Clay Lyle, dean and director, division of agriculture, Mississippi State College, in Starkville, Miss., spoke on the soil bank.

"The only land that can go into acreage reserve is that which produces price supported crops, such as cotton and rice here in Mississippi," he began.

"The government will pay the farmer to take his land out of production because of a surplus of crops. In the case of lint cotton for example, the price is 15¢ a pound. This is a negative approach to the farm problem," Dr. Lyle stated.

"The farmer will be paid less than if he produced his crop. This will mean less income for both the farmer and the community as a whole by taking part in the program of acreage reserve," he further commented. "The efficient farmer will find this an unprofitable arrangement," said Dr. Lyle.

"The only people who might possibly profit by this program would be the absentee landlord and the farmer who hires day labor to work his land," he concluded.

The speakers for Friday morning, Nov. 2, included: Dr. P. G. Hogg, state agronomist for the branch experimental station at Stoneville; Dr. R. Bruce, state agronomist for Mississippi State College; Dr. Howard Jordan, state agronomist, Mississippi State College; and Dr. L. N. Wise, state agronomist for Mississippi State College.

"All of the main national crops such as corn, rye, rice and wheat are grown right here in Mississippi," stated Dr. Hogg.

"We would do better to concentrate on growing these national crops, rather than specialize in such items as sesame and castorbeans," he continued. "These two crops are plagued by a very large weed problem in Mississippi, caused by a heavy annual rainfall and a high degree of soil fertility," he remarked.

"Another reason we should not specialize in sesame, castorbeans or other special types of crops, is because of the lack of appropriate industry for these specialty items," he ended.

"We are testing soil properties that affect the productivity of crops in order to build up a better management program," said Dr. Bruce.

"By taking an inventory of the soil we will know what chemical deficiencies are present, if any, and that the solution is," he said.

"Fertilized pastures pay off in increased production of beef and milk," reported Dr. Wise. "We made specific tests at the South Mississippi branch, experimental station, and discovered that a winter grazing combination of oats, wheat and rye

grass has produced almost 500 pounds of beef to the acre," he explained.

"In other tests at the Brown and Loam experimental station we found that the best winter grazing combination was rye grass and crimson clover. The average production rate over the past five years has been about 375 pounds of beef to the acre," he said.

"Pastures are our cheapest source of feed for livestock, and shows the highest margin of profit of any other practice known today," he ended.

The Fertilizer and Agriculture Workers convention ended at a banquet in the Hurricane Room of the Buena Vista Hotel.

Over 350 members of the Fertilizer and Agriculture Association were in attendance.

Phosphorus Furnace Runs Four Years Without Repair

COLUMBIA, TENN.—Shea Chemical Corp. officials report that their No. 1 phosphorus furnace was found to be in "remarkably good condition" after its run of nearly four years without interruption for internal inspection and repair.

The unit was inspected last week, following its shut-down for enlargement last month, when Shea's newest phosphorus furnace—at the same location—began operation. The older furnace had not been entered for inspection or repair since its start-up in January, 1953, O. D. Crosby, production vice president, stated.

"Ordinarily, phosphorus furnaces of this size are shut down for inspection and repair about every year and a half," Mr. Crosby said. "Because of the expense of repair, as well as the loss of production during the several-week period needed to repair a furnace interior, we have watched the furnace performance

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closely, throughout the entire operational period. Each time, our evaluation has been that the furnace could be operated for an additional period without endangering the furnace crucible. So we have kept operating," he said.

ASAE Announces Meeting Date for 1957

ST. JOSEPH, MICH.—The American Society of Agricultural Engineers has announced that its Golden Anniversary meeting will be held at Michigan State University, East Lansing, June 23-26.

The organization has a membership of nearly 5,000. The group's nominating committee has named Earl D. Anderson to assume presidency of the A.S.A.E. and since Mr. Anderson is unopposed, it is expected that he will take office during the June meeting. Mr. Anderson has been affiliated with the society since his senior year in Iowa State College. He is now with Stran-Steel Corp.

HOW UNION MULTIWALLS BUILD MORE BUSINESS FOR THE FERTILIZER INDUSTRY

"I insist on fertilizer in Multiwall bags," says world champion corn grower

Willard C. Kirk, farmer, Jeffersonville, Ohio

"Science rules on my farm," says Mr. Kirk, winner of many "ten ears" awards and trophies. "I rotate strictly so as not to rob my soil—soybeans and oats, one year each; pasture, two years; then corn, one year. I use lots of fertilizer, and prefer it packed in 80-lb. Multiwalls. I find Multiwalls easy to handle and store, and to open and empty completely. Also, fertilizer does not sift out of these paper bags."

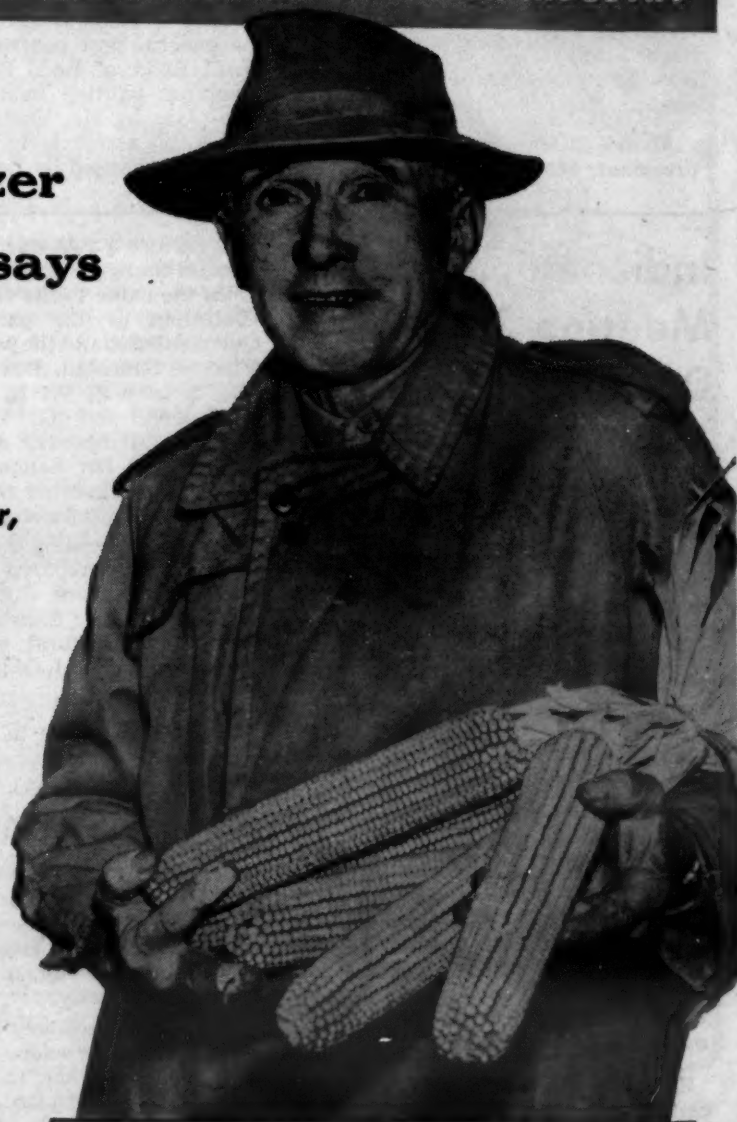
Union fosters science on the farm

Many farmers, like Mr. Kirk, get tips on fertilizer use through the information program of Union Bag-Camp Paper Corporation, which provides basic data for newspapers, magazines, and radio and television stations.

Union's country-wide educational program is designed to increase fertilizer consumption. More and more of the output of this growing industry is being marketed in Union Multiwall bags.

As farmer and dealer preference for fertilizer-in-multiwalls continues to grow, so does manufacturers' preference for Union Multiwalls.

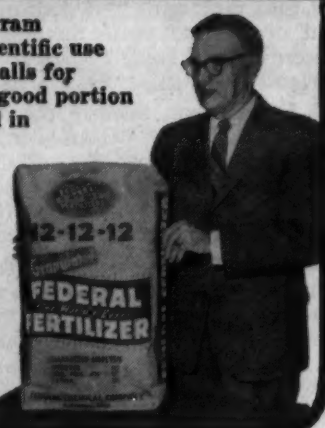
Are you completely posted on all the recent advances in multiwall packaging of fertilizer? We will be glad to show you some of the new Union sacks the industry is now using so successfully.



"Union's information program will help farmers in the scientific use of fertilizer. Union Multiwalls for fertilizer help them too. A good portion of our production is packed in Union Multiwalls."

Mr. John R. Sargent, Vice President in Charge of Sales, Federal Chemical Company, Louisville, Ky.

Federal Chemical Company supplies America's "bread-basket" with fertilizer, much of it packed in Union Multiwall bags.



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Insect Resistance and Pesticide Hazards Topics at Mississippi Control Conference

STATE COLLEGE, MISS.—Insect resistance and hazards in connection with insecticides will be general themes of the third annual Mississippi insect control conference at Mississippi State College, Jan. 10-11, 1957.

Announcement of the 1957 cotton insect control recommendations for Mississippi will be another conference highlight.

A panel discussion of insect resistance will have as members Dr. Johnnie Johnston of the National Cotton Council at Memphis, moderator, Dr. Randle Furr, USDA experiment station entomologist at Stoneville, and A. L. Hamner, Mississippi experiment station entomologist at State College.

A discussion of the use of phosphates in cotton insect control will be the subject of a panel headed by O. T. Guice, general inspector, state plant board at State College.

Panel members and subjects are: Dr. Marvin Merkl, experiment station entomologist at Stoneville, research findings; S. L. Calhoun of Agricultural Chemical Co., Greenville, characteristics of phosphates; Ed Broadus of Niagara Chemical Div., Jackson, hazards of phosphates.

Mabry Anderson of Clarksdale, president, Mississippi Aerial Appli-

cators Association, will lead a panel discussing problems of aerial application of insecticides.

A panel headed by C. C. Fancher, regional supervisor, Southeastern plant pest control region, at Gulfport, will discuss the functions and research findings of USDA entomologists on pests ranging from Mediterranean fruit flies, and pink bollworms through corn insects.

Chairmanships of sessions will be handled by A. G. Bennett, extension entomologist at State College, Dr. Ross Hutchins, head, state plant board, State College and Dr. Clay Lyle, dean and director, division of agriculture at Mississippi State College.

The annual conference will also include the annual business meeting of the Mississippi Entomological Assn. David Young, assistant extension entomologist, and association president, will preside.

Also included in the conference will be general pest control discussed by J. C. Redd, of Redd Pest Control at Jackson; fruiting habits of the cotton plant by Mr. Hamner; and highlights of research in cotton insect control discussed by Dr. Merkl.

Indiana Fertilizer Meeting Program Details Completed

LAFAYETTE, IND.—Program details for the Indiana fertilizer conference have been announced by Purdue University and the Agricultural extension service, sponsors of the event. The conference will be held two days, Nov. 27-28, at the Purdue Memorial Union.

F. W. Quackenbush, head of the University's department of biochemistry and state chemist, will welcome the group and preside at the opening session on the morning of Nov. 27. "Our Goals for Agricultural Research" will be discussed by N. J. Volk, associate director of the experiment station.

N. K. Ellis, head of the Purdue department of horticulture, will talk on "Fertilizer Requirements of Horticultural Crops," and J. B. Liljedahl, agricultural engineering department, will describe new developments in fertilizer placement machinery.

R. K. Stivers, agronomy department, will preside at the noon luncheon that day, with Ted Axton, president of the Lafayette Savings Bank presenting "A Banker's View of the Agricultural Future."

J. B. Peterson, head of the department of agronomy, will preside at the afternoon session of Nov. 27, which will feature four technical papers and a panel discussion on "Latest Results with Fertilizer-Insecticide Mixes."

Chairman of the panel will be G. E. Gould of Purdue's department of entomology, and participants in the discussion will be Leo E. Orth, agronomist, Sinclair Chemicals, Inc., and Victor L. Sheldon, agronomist, Olin Mathieson Chemical Corp.

The annual banquet is scheduled to be held Tuesday evening, with J. B. Peterson as toastmaster. W. R. Allstetter, vice president, National Plant Food Institute, Washington, D.C., will be the speaker. His subject: "The Soil Bank and Fertilizer Usage."

The morning session of Nov. 28 will be presided over by N. K. Ellis, and

will feature a two-sided panel discussion on changing fertilizer guarantees from the oxide to the elemental basis. Chairman of the panel is F. W. Quackenbush, and the participants, Dr. Vincent Sauchelli, Davison Chemical Co., division of W. R. Grace & Co., Baltimore, and G. H. Kingsbury, president, Kingsbury & Co., Indianapolis, Ind. Dr. Sauchelli will take the position favoring the change and Mr. Kingsbury opposing it.

A paper discussing the economics of fertilizer use, prepared by three Purdue staff members, will be presented. Authors are Earl Kehrberg and V. W. Ruttan, agricultural economics department, and A. J. Ohlrogge, agronomy department.

Factors involved in the price of fertilizer will be discussed by A. H. Bowers, agronomist, Swift & Co., Chicago, in a paper scheduled for delivery Wednesday afternoon.

Concluding remarks will be given by Z. H. Beers, executive secretary, Middle West Soil Improvement Committee, Chicago, representing industry; and J. B. Peterson, representing Purdue University.

Tours of the soil testing laboratory, greenhouses, life science building and other facilities are to be arranged also for the afternoon of Nov. 28, it has been announced.

The University has urged those who intend to be present, to write directly to the Union Club at Purdue for room reservations. Accommodations will also be available at the Fowler and Lahr Hotels and at the Morris Bryant and Cedar Crest Motels, the announcement says.

SEEKS RED SCALE PARASITE

BERKELEY, CAL.—A University of California scientist will set out next month on a round-the-world search for parasites to control red scale, California's worst citrus pest. Dr. Paul H. De Bach, entomologist in the department of biological control at Riverside, Cal., will examine wild and cultivated citrus in 12 countries in hopes of finding parasites hardy enough to survive the winter-summer temperature extremes of Southern California's interior. The areas to be visited include Hawaii, Japan, Formosa, Hong Kong, Burma, India, Pakistan, Iran, Turkey, Greece, Italy, and Spain.

REFERENDUM

(Continued from page 1)

sale of plant food material in the corn belt.

In terms of dollars and cents, here is the situation: This week USDA announced that the price support level for corn for the 1957 crop will be for purposes of the soil bank—acreage reserve program at 74% of parity or \$1.31 per bushel. Land taken out of the 51 million acre base acreage for the soil bank eligibility would have to represent 15% reduction in that proportionate acreage national allotment per farm to obtain a 90¢ a bushel corn payment, times the average yield for the county or farm where the crop is grown. In the base years the yields are on the climb—which makes the temptation to cooperate with the soil bank even more alluring.

For the plant food industry, with its great potential for increased crop output through intelligent use of modern plant foods, this seems like a big potential for sales activity in the corn belt states.

It also sets up the commercial corn belt as a target for the non-commercial corn belt for which the latter may ultimately understand that the payoff is in yields per acre which cannot be realized in the primitive cultivation practice which they ordinarily employ.

Another interesting incident of the referendum alternative is that Russell Coleman, executive vice president of the National Plant Food Institute, as originally published in Croplife, stated that on approximately 35 million acres of corn land in the commercial corn belt, this nation could produce all the needed supplies of corn for animal feeding. Furthermore, through proper fertilization practices plus good use of pesticidal chemicals—enough of the big feed grain could be produced to maintain our animal feeding requirements; and from these reduced acreages the farmers would obtain better net profits than if they had produced substantially more corn from 81 million acres!

Here is the low down on the corn referendum which the commercial corn belt faces on its Dec. 11 election. The announcement last week by USDA undoubtedly favors a vote for the soil bank. The soil bank is an instrument calculated to reduce surplus grains and other commodities. The attraction of the levels of payment or support for the soil bank is aimed to reduce corn acreage for the 1957 crop.

At this point the plant food industry may sense a big chance not only to reduce acreage for that big feed grain crop but also to educate farmers that the acreage reduction may also be a cost factor reduction in that crop year.

Here are alternatives available to farmers under the 1956 referendum for corn in the commercial corn area.

1. Acreage limitation. Acreage allotments under the AAA act of 1938 would be determined for 1957 and subsequent years except in national emergencies. Acreage allotments for the commercial corn area are that acreage, which would produce a normal supply of corn, based on five year average yields, and adjusted for abnormal weather together with carryover, estimated production outside commercial areas and imports.

2. The price support level for the old AAA acreage allotment program will be 77% of parity or \$1.36 a bushel; the USDA discretionary support would be between 75-90% of parity support if the farmers decided to advocate the acreage allotment plan of the AAA act of 1938 instead of the new soil bank program.

3. As for non-compliers in the programs, USDA is silent but

leaves the door open for another year when they may support the non-compliers in the corn belt some level of guaranteed support—but at no level higher than the price support for compliers.

4. Acreage reserve payments payment for each acre by which farmers reduce their acreage below corn acreage allotments to the extent that the acreage representing such reduction is placed in the acreage reserve. Farmers must comply with allotments for all other commodities—except that a farmer may produce 15 acres of wheat or 6 acres of peanuts.

5. Duration of the program. Acreage allotments would be effective every year except in national emergencies. Price support pursuant to the farm law of 1949 would also be effective every year.

6. The effect of price support levels for other feed grains in 1957. For 1957, unless price support is made available to non-cooperators in the commercial area, corn produced in the non-commercial corn area would be supported at 75% of the support level of support to the cooperators in the commercial corn area, and price support for oats, rye, barley and grain sorghums would be discretionary. For 1957, if price support is made available to non-cooperators in the commercial area, and corn produced outside the commercial area and oats, barley, rye, and grain sorghums would be supported at not less than 70% of parity. After 1957 corn produced outside the commercial corn area would be supported at 75% of parity of the level of support to cooperators in the commercial areas and the price support for oats, barley, rye and grain sorghums would be discretionary.

7. The allotment program is definitely a cross compliance program between crops. Here is the USDA analysis of that phase of the deal. Farmers must comply under the acreage allotment program with acreage allotment for corn and other commodities.

Here is the other choice now facing corn belt farmers in the referendum on Dec. 11:

1. Acreage limitations. If the farmers turn down, by a failure to reach a 66% favorable majority for acreage allotments on Dec. 11, base acreage would be determined for the years 1957-58-59 on the base acreage program of the soil bank for corn of 51 million acres.

2. The level of price support for that acreage would be that which would assist farmers to market corn in the normal channels of trade and commerce but not to encourage uneconomic production. As stated above the level of support under the aspect of the program is known to be \$1.31 per bushel.

3. Under the soil bank base acreage allotment plan farmers must not exceed their corn base acreage and place a certain percent of their corn base acreage in the acreage reserve program or in the conservation reserve program, or in a combination of the two.

4. For non-cooperators, price supports may be determined at the discretion of the Secretary.

5. Acreage reserve payments. Now known as \$1.31 per bushel of the price support level for the 1957 corn crop, or in terms of acres, nine cents per bushel times average yield for the local acreage. To obtain such payments, the farmer must reduce his corn acreage below his corn base acreage to the extent that the reduction is placed in the acreage reserve. Farmers must comply with all allotments except in the case of wheat where a farmer may produce



John J. McBride, Jr.

JOINS NATIONAL... McBride has been... manager of New York, according to... by William... vice president and... new appointee... with the M... of Allied Chemi... Potash, Jo... Sulphur Co... Solidated Coal... facilities to pro... deposits near Carls... is expected to be

15 acres and in... one acre.

6. Corn base... determined for... acreage reserve... bank, 1957-58-59

7. If the soil... corn referendum... what it will me... support levels f... Unless price su... for non-coopera... rial area, corn p... commercial area... at 82% of the... cooperators in t... Price support f... and grain sorgh... supported at a disc

For 1957, if p... available for th... the commercial... outside the comm... barley, rye and g... be supported at... of parity.

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8. Farmers v... tions on corn... comply with ac... corn and other... soil bank partic

Now It's Rodeo Controlled

BERKELEY, scattered by pl... pound or less p... ing effectively... dents, according... current issue o... ture," monthly... by the Univers... taining reports... experiment sta... Application o... any custom ag... sures that the... tered and, wh... troling small... danger of pois... cattle regardle... is used.

promote grain sanitation at the country level in four spring wheat states.

In addition, there were more than 25 state extension workers from all parts of the country who attended the conference sessions.

In his discussion, Mr. Pence of the Kansas wheat organization, said that due to a series of dry weather harvests, the wheat industry may be getting better weevil control than it deserves. The real test will come with the first wet season, he added.

The speaker said that Kansas is making progress in the clean grain program but there are some weak spots evident. The large-scale commercial wheat farmer is doing a good job, he said, but many of the

(Continued on page 21)

Grain Sanitation Affected By Miller Act, Group Told

KANSAS CITY—"I don't think it is an exaggeration to say that clean grains... clean grain free of insect parts and rodent pellets... could be possible without the proper use of pesticides," was a statement made by Dr. Jack Dreessen of the National Agricultural Chemicals Association, Washington, D.C., in a paper prepared for delivery at the second National Grain Sanitation Conference at Kansas City, Nov. 12.

Mr. Dreessen's paper discussed the Miller Amendment to the food and drug law as it applies to pesticide residues on grains. He pointed out that the law now requires that any grain found containing an illegal chemical residue can be called adulterated and condemned by the food and drug authorities.

Government and industry have worked to establish standards for safe residues and tolerances have been set up for specific fumigants, he said, but more work needs to be done in this field and it is now underway.

The speaker pointed out the importance of pesticides in grain production and handling and said that the estimates have shown that it costs \$1.2 million to develop and market a new chemical pesticide or herbicide. He said that a survey of National Agricultural Chemicals Assn. members indicated that they feel that the Miller amendment is working satisfactorily.

That much progress has been made in the grain sanitation program was emphasized by a number of other speakers appearing on the program. The conference brought together nearly 300 industry and government officials to review sanitation program and confer on problems in connection with it. Sponsors of the meeting were the Association of Operative Millers and the Millers National Federation.

Shelbey T. Grey, director of the bureau of program planning for the Food and Drug Adm., reiterated the fact that much progress has been made in the field of grain sanitation. He quoted sampling statistics to show substantial improvement this year so far, compared with last season, and an even greater improvement over five years ago.

Other speakers also expressed satisfaction with the progress of the clean grain program and outlined steps that are needed for further gains.

"The conference is an educational enterprise to promote progress in the clean food program," Herman Steen, vice president of the Millers National Federation, said in opening the meeting as moderator.

The scope and objectives of the conference were outlined by G. S. Kennedy, of General Mills, Inc., president of the Millers National Federation, who said that one of the fundamental rights of the American consumer is the right to health through clean, pure food. Those who oppose this right are certain to be brushed aside by the public demand, Mr. Kennedy said, for the consumer has the powerful weapon of public opinion on his side, a weapon that can get results.

In discussing the progress of the program to date, Mr. Grey said although sampling statistics indicated much improvement, the stricter standards enforced by Food and Drug officials since July of this year had brought an increase in the number of condemned cars. Also, he said: "We have some unofficial figures indicating that the percentage of carloads of wheat grading 'weevily' has increased substantially over last year. This is a

red flag reminding us that the problem has not disappeared and may in fact be greater this year than last."

Mr. Grey also said that there was some evidence of backsliding in the program of flour mill sanitation, and indicated that food and drug mill inspections would become more frequent shortly.

Lloyd N. Case, director of the grain division of the Commodity Stabilization Service, Washington, said that when the cleanup program was presented to the grain trade in 1948 there was much apprehension in the industry that marketing chaos and disaster would follow. These predictions have not materialized. "Restraint, common sense and willingness to work together have pulled us through safely thus far and promise well for the future," he said.

The USDA has incorporated the food and drug standards on clean wheat in the price support program and made it a provision of the loan contracts. This step brought home the problem to thousands of farmers and the battle was half won, he said.

Much more needs to be done in the way of research in fumigation and grain storage problems, Mr. Case said, and Commodity Credit Corp. has set aside a substantial sum for this purpose in an experimental program under way at Watseka, Ill.


A part of the program was devoted to a discussion and exposition of the work being done by federal and state extension departments and others to bring home to the farmer the need for keeping his grain clean, preparing his storage spaces properly and fumigating regularly. It was obvious that a vast amount of educational work is being done along this line and that it is having its effect, particularly in the commercial wheat regions. The emphasis right now is on wheat, but at a later date there will be a program of a similar nature on corn.

M. P. Jones, extension entomologist, U.S. Department of Agriculture, Washington, D.C., outlined the details of how the federal and state extension departments are working on the clean grain program.


Others who discussed typical state programs were Wayne Colberg, extension entomologist of the North Dakota Agricultural College; David Walker, assistant entomologist, Washington State College; Charles W. Pence, president of the Kansas Wheat Improvement Assn., and Clinton C. Zinter, F. H. Peavey & Co., grain dealers, Minneapolis, who described his company's program to

the Broyhill


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John J. McBride

JOINS NATIONAL POTASH—John J. McBride has been made traffic manager of National Potash Co., New York, according to an announcement by William B. Porterfield, Jr., vice president and sales manager. The new appointee was formerly associated with the Mutual Chemical Div. of Allied Chemical & Dye Corp. National Potash, jointly owned by Freeport Sulphur Co. and Pittsburgh Consolidated Coal Co., is constructing facilities to produce potash from deposits near Carlsbad, N.M. Production is expected to begin early in 1957.

15 acres and in the case of peanuts, one acre.

6. Corn base acreage would be determined for each year during the acreage reserve program of the soil bank, 1957-58-59.

7. If the soil bank phase of the corn referendum is adopted, here is what it will mean in terms of price support levels for other feed grains: Unless price supports are available for non-cooperators in the commercial area, corn produced in the non-commercial area would be supported at 82½% of the support level for cooperators in the commercial area. Price support for oats, barley, rye, and grain sorghums would be supported at a discretionary level.

For 1957, if price support is made available for the non-cooperators in the commercial area, corn produced outside the commercial area and oats, barley, rye and grain sorghums would be supported at not less than 70% of parity.

After 1957, as long as corn base acreages are in effect, corn produced outside the commercial corn area would be supported at 82½% of the support level to cooperators and price supports for oats, barley, rye and grain sorghums would be discretionary.

8. Farmers under acreage limitations on corn will be required to comply with acreage allotments on corn and other commodities to obtain soil bank participation.

Now It's Rodents Being Controlled By Airplane

BERKELEY, CAL. — Cereal bait scattered by plane at a rate of one pound or less per acre prior to seeding effectively controls range rodents, according to an article in the current issue of "California Agriculture," monthly magazine published by the University of California containing reports of research by the experiment station.

Application of poisoned grain by any custom agricultural aircraft assures that the bait will be well scattered and, while effective in controlling small rodents, there is no danger of poisoning deer, sheep or cattle regardless of what rodenticide is used.

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Industry Patents and Trademarks

2,767,224. Hexachlorocyclohexane Isomer Separation. Patent issued Oct. 16, 1956, to Richard H. Kimball, Lewiston, N.Y., assignor to Hooker Electrochemical Co., Niagara Falls, N.Y. The process for separating the alpha and gamma isomers of benzene hexachloride, involving a series of alpha isomer and of gamma isomer-enrichment steps in which the feed for the series of alpha isomer-enrichment steps is derived from the series of gamma isomer-enrichment steps and a solvent liquor for the gamma isomer-enrichment steps is derived from the series of alpha isomer-enrichment steps, which includes: (1) dissolving a crystal cake of isomers of benzene hexachloride containing at least the alpha and gamma isomers in a second liquor obtained from a second alpha isomer-enrichment step in the process; (2) effecting crystallization of at least alpha and gamma isomers from the solution so produced; (3) separating the so-obtained crystals by fluid classification to yield a first fraction of crystals in which the ratio of gamma isomers to alpha isomer is enhanced and a first suspension of crystals in which the ratio of alpha isomer to gamma isomer is enhanced; (4) recovering from the said first suspension of crystals a first liquor used in the preparation of the crystal cake of isomers for step (1) and a first precipitate containing alpha-isomer-enhanced crystals; (5) dissolving the said gamma-isomer-enhanced first fraction of crystals in a third liquor obtained from a third alpha isomer-enrichment step in the process; (6) effecting crystallization of at least alpha and gamma isomers from the solution so produced; (7) separating the so-obtained crystals by fluid classification to yield a second fraction of crystals in which the ratio of gamma isomer to alpha isomer is enhanced and a second suspension of crystals in which the ratio of alpha isomer to gamma isomer is enhanced; (8) combining said second alpha-enhanced-suspension of crystals and the first alpha-enhanced-precipitate recovered from the said first suspension of crystals; (9) recovering from said combined second suspension and first precipitate the said second liquor used in step (1) of the process and a second precipitate containing a higher ratio of alpha isomer to gamma isomer than the ratio of the said precipitate; and, (10) continuing the process to produce substantially pure gamma isomer.

2,768,110. Isothiourea Compound Fungicidal Compositions and Method of Controlling Fungi. Patent issued Oct. 23, 1956, to Johannes Thomas Hackmann, Amsterdam, Netherlands, assignor to Shell Development Co., Emeryville, Cal. A composition suitable for controlling fungi comprising an N,N,N'-trihydrocarbyl-S-hydrocarbyl isothiourea having at least 6 carbon atoms and wherein each hydrocarbyl substituent contains not more than about 14 carbon atoms, and an emulsifying agent suitable for dispersing the composition in an aqueous medium.

2,768,111. Emulsifiable Insecticidal Concentrates. Patent issued Oct. 23, 1956, to Harry S. Butler and Clarence C. Harvey, Jr., Baton Rouge, La., assignors to Ethyl Corp., New York. An emulsifiable insecticidal concentrate, comprising a chlorinated insecticide, a non-polar solvent for said insecticide, and a polar solvent for said insecticide, the weight ratio of non-polar:polar solvent being between 8:1 and 1:2, said concentrate having water present in a concentration not exceeding 0.2 percent by weight of the concentrate.

2,768,889. Agricultural Composition. Patent issued Oct. 30, 1956, to Jeremiah F. Twomey, St. Boniface, Manitoba, and Frank H. Peto, West Vancouver, British Columbia, Canada.

A composition for leaf feeding crops comprising a plant hormone and a mixture of minor element compounds, said compounds being in a form assimilable by the leaves of plants and being present in an amount sufficient substantially to satisfy by leaf feeding deficiencies within the plants of the crop of said minor elements under the conditions of artificially stimulated growth produced by quantities of said hormone producing a herbicidal effect on weeds associated with said crop.

2,768,896. Storage of Agricultural Products. Patent issued Oct. 30, 1956, to Fred F. Lewis, Brady, Mont. A method of protecting and storing exposed agricultural products having the form of loose kernels which comprises forming a non-toxic water impervious surface upon the ground by spraying thereon a non-toxic thermoplastic flexible resin which dries to form a continuous protective surface across the ground, placing a stack of loose kernels of agricultural products to be stored and protected upon said protective surface, and then spraying upon and around the entire exposed outer surface of said stack of loose agricultural products a non-toxic thermoplastic flexible resin which adheres to the kernels which are disposed adjacent the outer surfaces of said stack and which adheres to said protective surface to form a substantially water impervious junction with said protective surface around the entire circumference of the stack to protect said agricultural products from deterioration due to weather, rotting, depredation and other destructive forces.

2,769,702. Herbicidal Composition. Patent issued Nov. 6, 1956, to Frank J. Sowa, Cranford, N.J. An herbicidal composition comprising a compound selected from the group consisting of the ammonium and amine salts of fluosilicic acid in phytotoxic concentration, said composition containing sufficient non-ionic wetting agent to impart to an aqueous solution of the composition containing from 3 to 15% of said compound a surface tension below about 50 dynes per centimeter at 23° C.

2,769,703. Method of Producing Phosphate Fertilizers. Patent issued Nov. 6, 1956, to Louis E. Andrés, St. Gratien, and Yves J. Berquin, Paris France, assignors to Potasse & Engrais Chimiques, Paris. In a process of manufacturing a phosphate fertilizer in which natural phosphate rock containing calcium phosphate is reacted with nitric acid and there is added a neutralizing agent to the mixture of said phosphate rock and nitric acid, the method of completely neutralizing the mixture and preventing the formation in the reaction product of said phosphate rock, nitric acid and neutralizing agent of calcium phosphate in a form which is insoluble in ammonium citrate which comprises the steps of adding the neutralizing agent to said mixture of phosphate rock and nitric acid in sufficient amount to completely neutralize it and a compound of aluminum in an amount to insure the presence of at least 20 mols of Al to each 100 mols of P₂O₅ present in the mixture and adding to said mixture a compound containing sulphate ions to insure the presence of sulphate ions in an amount to convert all calcium nitrate present into calcium sulphate, said aluminum compound being added after said rock phosphate is reacted with said acid and prior to the addition of said neutralizing agent.

2,769,704. Method of Producing Phosphate Fertilizers. Patent issued Nov. 6, 1956, to Louis E. Andrés, St. Gratien, and Pierre G. Pagny, Paris, France, assignors to Potasse & Engrais Chimiques, Paris. In a process

for the manufacture of a phosphate fertilizer in which natural phosphate rock is reacted with a mineral acid and there is added a neutralizing agent to the mixture of said phosphate rock and mineral acid the method of preventing the formation in the reaction product of said phosphate rock, mineral acid and neutralizing agent of calcium phosphate in a form which is insoluble in ammonium citrate which comprises the step of adding to the mixture of phosphate rock and mineral acid a compound of iron in an amount to insure the presence of at least 20 mols of Fe to each 100 mols of P₂O₅ present in the mixture.

Industry Trade Marks

The following trade marks were published in the Official Gazette of the U.S. Patent Office in compliance with section 12 (a) of the Trademark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. (See Rules 20.1 to 20.5.) As provided by Section 31 of the act, a fee of \$25 must accompany each notice of opposition.

The trademarks below were published in the Official Gazette of the U.S. Patent Office in the issue dated Nov. 6, 1956:

Shirlan, in capital letters for chemical compounds having bacteriostatic and/or fungicidal properties. Filed Oct. 5, 1955, by E. I. du Pont de Nemours & Co., Inc., Wilmington, Del. First use May 12, 1955.

Am-Co, in capital letters, for rodenticides. Filed Jan. 19, 1956, by Benjamin D. Smith, doing business as American Manufacturing Co., Whitesboro, N.Y. First use on or before Mar. 30, 1955.

Aqualizer, in italic capital letters, for fertilizer comprising agricultural grade aqueous ammonia. Filed Nov. 25, 1955, by N'land Industries, Inc., Lewiston, Idaho. First use Apr. 11, 1954.

Bay-Sol, in capital letters, for nitrogen solutions for fertilizers. Filed June 11, 1956, by Escambia Bay Chemical Corp., Pensacola, Fla. First use Oct. 14, 1955.

Ammo-Nite, in capital letters, for fertilizer. Filed June 11, 1956, by Escambia Bay Chemical Corp., Pensacola, Fla. First use Oct. 21, 1955.

Design, in three stripes, chevron style, for fertilizers, soil conditioners,

soil amendments, soil corrective chemical preparations to prevent premature dropping of fruits and vegetables from trees and plants and plant hormones. Filed Aug. 14, 1956, Standard Oil Co. of California, S. Francisco. First use June 25, 1956.

Bindweed Control Is Subject of Conference

ROBSTOWN, TEXAS—The dangers of bindweed were stressed at the third annual Nueces-San Patricio county bindweed control meeting held here recently.

One of the main addresses was given by D. P. Pawlik, county agricultural agent, who talked on "The History and Characteristics of Bindweed."

He said the weed, found in many parts of Texas, now infests 60,000 acres of farmland in the Panhandle. The infestation has spread to Central Texas, the Rio Grande and the Coastal Bend areas.

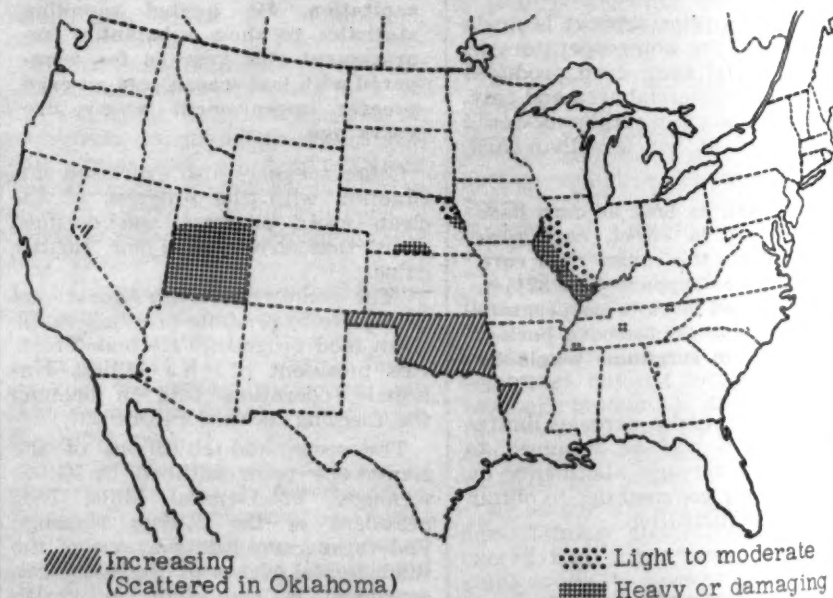
He told the group that bindweed seed could remain dormant a long time to await the optimum moisture conditions. Several methods of control were given, which include both proper cultivation and the use of chemicals.

The first step is to locate the infested area then isolate it from the rest of the farm by building a border around it and plowing it separately.

Several soil sterilants will give effective control if conditions are right and the chemicals are applied correctly, he said.

A number of farmers related their experiences in controlling bindweed by the use of 2,4-D. James Williams of Odessa said he had controlled bindweed by using 2,4-D, though he also practices intensive cultivation. Others reported similar success though the consensus was that bindweed was still rampant in many areas and more rigid control methods were needed.

Fred Doherty, head of the Doherty Weed Killer Co. of Corpus Christi, urged that counties could set up bindweed control districts which would require every farmer within its boundaries to make an effort to control bindweed.



SPOTTED ALFALFA APHID SPREADS—USDA map shows the distribution of this pest at the end of October. In Nevada, a rapid buildup to economic numbers is seen in Lyon County, first found infested week of Sept. 8. In South Dakota, the aphid was found first in Lyman County, bringing total to 22 counties infested. In Arizona, sticky-board traps indicate some flights in the Yuma area. Survey in fall showed occasional field with ten per trifoliate leaf in Yuma area, with most fields infested. Where insecticides were used during the summer, populations were not heavy.

Oklahoma reports non-economic populations in most areas, but the aphid are building up in scattered areas. Highest populations are in northern and western areas where 475 aphids per ten sweeps were picked up in Payne County. Damage to alfalfa in Republican Valley, Nebraska, continues, with counts of 100-1000 plus per sweep in most fields. In the northeast, population diminished somewhat.

In Illinois, the survey showed severe infestations in counties south and southwest on diagonal from White to Hancock County; moderate in areas farther north from Lawrence northwest to Mercer and north to Whiteside and none to light in area north of this line from Edgar County to Woodward north to Carroll. A light infestation in Georgia's Polk and Carroll counties was reported.

IRON T. SHAW SAYS:

Flourishing Agriculture of Future Depends on Research

ATLANTA, GA. — Research was held up as the key to a flourishing agriculture at the Agricultural Amendment Institute convention in Atlanta by Byron T. Shaw, administrator, Agricultural Research Service, U.S. Department of Agriculture, Washington. He added that industry and government must share the responsibility for doing this research. The meeting was held at the Biltmore Hotel here Nov. 7-9.

Dr. Shaw called attention to the fact that agriculture has gotten out of balance. "There have been greater strides in improving efficiency of producing such crops as food grains than for livestock and livestock products." Restoration of the balance in agriculture is the biggest challenge facing research today, he said.

Research is helping to restore this balance by providing farmers with ways of cutting costs in producing those commodities that are most wanted by consumers, according to the USDA research administrator.

As an example, Dr. Shaw told of some USDA experiments with fertilizers. One test involved the use of 200 lb. of nitrogen to the acre of corn in the Columbia River Basin, boosting yields from 21 to 144 bu. per acre. By using 160 lb. N to the acre on potatoes in Alabama, yields were doubled. In Arkansas, 600 lb. superphosphate per acre on pasture returned 382 lb. of beef, compared with 61 lb. without fertilizer. In another experiment, he said, 160 lb. of P per acre on sweet corn growing in irrigated land doubled yields.

"These experiments clearly demonstrate the value of research and fertilizers in lowering farm production costs," Dr. Shaw said.

Another way in which research is helping restore the balance in agriculture is through the development of new crops, by discovering and developing new uses for established crops and by improving the quality of agricultural products so that they can compete better for the consumer's dollar, both at home and abroad.

As examples of this line of research, Dr. Shaw cited the way cotton has been improved with chemicals, the development of a plant which is the source of the insecticide rotenone, finding that a tropical yam contains cortisone, and developing a way of fermenting grain to increase its protein content.

The need for more efficient and increased livestock production is going to become even greater because of the population growth, Dr. Shaw pointed out.

"One of the greatest opportunities for improving livestock production lies in the development of more productive pastures and ranges."

Dr. Shaw pointed out that research indicates that forage irrigation is successful in improving the gains for steers grazed, or increasing milk production for dairy cows. Plant breeding research is also helping improve pastures.

"Fertilizers are proving important in pasture establishment," he said.

EDITOR'S NOTE

This report is in addition to the one presented in CROPLIFE last week giving the highlights of early portions of the AAI meeting in Atlanta. Last week's coverage was by Henry French, while this portion was covered by Thomas E. Letch, both of CROPLIFE's editorial staff.

calling attention to the "remarkable Beltsville success with band seeding" (fertilizer laid in just under the seed) in which 130% more forage was produced than by broadcast seeding.

The opportunity for the fertilizer industry is indicated from a study made in 1950 which showed that adequate fertilizer could double hay production, Dr. Shaw said.

Looking ahead to 1975, he said, "we expect farmers to use 10 to 12 million tons of plant nutrients—75 to 100% more than now. And much of that will be for pastures and range land," he said.

The fertilizer industry can meet

the needs of farmers for cutting production costs by increasing the plant nutrient content of fertilizers and developing new forms of fertilizer, he pointed out.

Research needs now, he said, include the following:

More knowledge of placement of fertilizer in relation to seeds, plants and crop residues.

Merits of fall vs. spring application and of split application in various sections.

Information on the relative effectiveness of applications made before or after crops emerge.

"To improve liquid fertilizer production we need to learn more about mixed fertilizer formulations," Dr. Shaw also said there is a need for improvements in application equipment.

In his speech before the group, Dr. Kenneth McFarland, educational consultant, General Motors Corp.,

Topeka, Kansas, stressed the human element in business.

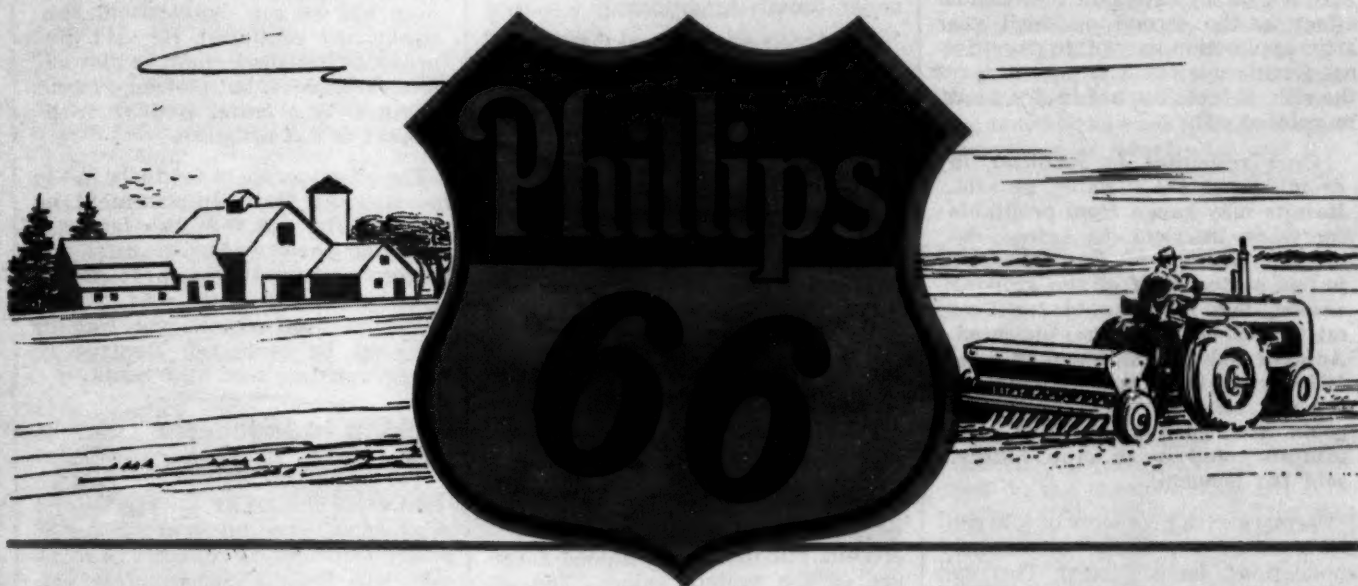
To be truly successful, a man must have both skill in his work and desirable human qualities, he said.

He praised the capitalistic system as "the finest thing in the world." Putting it in its simplest terms, he said, the capitalistic system is based on the idea that "he profits most who serves best." He urged AAI members to recognize the value of free enterprise and said that they should work to get across the idea that it is not a crime to make a profit in business.

In another talk, Max Fetty, vice president in charge of public relations, Delta Tank Manufacturing Co., Baton Rouge, La., pointed out that everyone should have fun at work . . . get joy out of accomplishing something superbly well.

At the banquet Friday evening.

(Continued on page 23)



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TULSA, OKLA.—1708 Utica Square
WICHITA, KAN.—501 KFH Building

Economic, Technical Sides Of Plant Food Described to Dealers at Iowa Conference

AMES, IOWA—Iowa's fertilizer dealers were told a great deal about both the technology and economics of plant food use in their annual short course at Iowa State College here. Experts in various fields of plant nutrition and agronomy talked to the group which comprised dealers from all parts of the state.

Lloyd Dumenil, agronomist, summed up studies of fertilizer response under drouth conditions, by stating that dry conditions increase risks in fertilizer investments, but most seasons favor corn production in Iowa, making proper fertilizer use profitable over a period of years.

The Iowa agronomist added that fertilizer not utilized in a dry season may not be lost. He said the residual effect in the second or third year after application may often pay original fertilizer costs. This fact reduces the risk of fertilizer use in dry years, he pointed out.

Crop responses to fertilizer in drouth years are variable, he said. Results may range from profitable increases in yield to actual decreases. Where the subsoil moisture is low at the start of the growing season, low response to fertilizer might be expected, he indicated. Actual results would hinge on rainfall during the summer, however. Good rainfall, well-distributed, could give good yields. But poor rainfall could mean crop failure, said Dr. Dumenil.

Farmers with prospects of low subsoil moisture can "hedge" on fertilizer applications, he continued. This can be done by reducing the rate of fertilizer and by reducing stand levels.

But since fertilizer averages out profitably over a period of years, cutting back on applications could cost a farmer increased yields if rainfall proved favorable, the agronomist concluded.

A comparison of fertilizer placement in Iowa State College tests the last 2 years shows there is no advantage to placing fertilizer deeper than plow depth, according to agronomist John Pesek, who reported results of experiments made recently at Iowa State.

In fact, where superphosphate fertilizer was placed at 16 and 24-inch depths with a subsoiler, yields were less than where the fertilizer was plowed under, he said.

The agronomy and agricultural engineering departments at the college conducted the tests in cooperation with the agricultural research service of the U.S. Department of Agriculture, it was explained.

An attempt was also made in the experiments to determine the effectiveness of subsoiling. Results do not look encouraging, said Mr. Pesek, particularly in view of the added costs of subsoiling operations.

He pointed out that limited tests conducted over a 2-year period aren't conclusive, but he stressed that indications are that there is no advantage to deep placement of fertilizer, or subsoiling. He said research on the subject will be continued.

That fertilizer has a limited effect on the feeding value of plants or grain was stated by Dr. Louis Thompson who said that nitrogen use, for example, would result in slight increases in the protein content of a crop. But the largest economic increase in protein is obtained with a moderate level of nitrogen fertilizer, he said.

"Adding more and more nitrogen fertilizer beyond this point will not bring about corresponding increases

in plant or grain protein percentages," he declared.

The total nitrogen content of plants will be boosted, but this extra nitrogen will not be converted to protein forms useful to animals, it was stressed.

As the addition of nitrogen fertilizer passes the point where it will increase plant growth and yields, surplus amounts of nitrogen will be stored in plants. This nitrogen exists in nitrate form, said Dr. Thompson.

Excessive amounts of nitrates present in plant tissue may be harmful to livestock, he added, and reminded that such a situation may develop under drouth conditions.

The agronomist related that in 1956 many farmers used large amounts of nitrogen early in the season. Corn took up amounts in excess of early growth needs, and moisture was insufficient to keep corn growing and converting nitrogen to protein. So when the corn was grazed, or harvested green, certain plant tissues contained an abnormal amount of nitrogen in nitrate form.

However, there is little danger of nitrate poisoning in normal years if conservative fertilizer recommendations are followed, he added.

Experiments dealing with the effect of fertilizer on plant make-up were reported by Dr. John Hanway. He indicated that nitrogen fertilizer generally will increase total plant protein, but this is not a good measure of the protein value. "The increase is in quantity, not quality," he emphasized.

Dr. Hanway said that phosphorus is the most essential mineral in feeds. And he added that the phosphorus content in feed crops can be increased by heavy applications of the nutrient.

He suggested that this would be desirable in many cases. Phosphorus content of corn ranges from one-tenth of 1% to five-tenths of 1%, he said. He also noted that recent cattle feeding experiments at Iowa State College demonstrated that a corn phosphorus level midway between those points—.25 of 1 percent—was desirable for fattening cattle.

Phosphorus content of alfalfa hay is in the same range as that of corn, he said, but the phosphorus level of alfalfa is increased more by phosphorus fertilizer than is that of corn. Interaction of fertilizer elements may also have an effect on the composition and nutritive value of plants, it was explained. Dr. Hanway pointed out that the use of nitrogen fertilizer may increase, decrease, or not affect phosphorus content in plant tissues. And using potassium may reduce the amount of calcium in plants.

He said these considerations emphasize the importance of a well-balanced fertilizer program. If use of the different elements is balanced, quality of the feeding value of plants won't be reduced—and may be increased, he said.

Hill or row fertilizer applications are the best bet for a farmer who plans to use a limited amount of fertilizer for corn, John Webb, Iowa State College agronomist, told the dealers.

"Where the quantity of fertilizer to be used is small, hill or row application is most efficient," he said.

Results of tests during the last 15 years confirm this point, Mr. Webb said. Average yield increases of 6 to 10 bushels per acre have been ob-

tained from hill or row applications of 100 to 125 lb. of fertilizer per acre.

On some soils of medium to high fertility, this amount of fertilizer in the row may be enough to give maximum yields, but more often, he added, additional amounts are needed.

He noted that some farmers object to row fertilizer because it results in additional labor at planting time. For this reason, some operators prefer broadcasting fertilizer. But in general, one and one-half to two times as much fertilizer is needed to equal the effect of row applications.

It's hard to say that either method is superior, Mr. Webb said. He said weather conditions may determine a farmer's choice in a particular year.

Cool, wet conditions favor row applications, he explained, so this method might be the best choice for the northeast quarter of Iowa, or areas where drainage is a problem, he commented.

Warm, dry spring weather might give broadcasting an advantage over hill or row application, the agronomist continued. He said the broadcast fertilizer could be plowed or disked under, but plowing places fertilizer in a better position with respect to soil moisture.

The effectiveness of fertilizer in the row is closely tied with placement, he stressed. He said that the fertilizer should be placed as deep as, or slightly deeper than, the seed. It should also be to the side of the seed.

The fertilizer should not contact the seed, he cautioned. Damage to the germinating seed may result.

Dieldrin to Indonesia For Anti-Malaria Drive

SAN FRANCISCO — The second part of a one hundred thousand pound shipment of dieldrin insecticide left San Francisco Nov. 11, bound for Indonesia's spray-can army now fighting a house-to-house battle against malaria.

The shipment brought the total amount of dieldrin sent to that country since May to 900,000 pounds. At that time the Indonesian government began a five year campaign to eradicate malaria-bearing mosquitoes from an area where 30 million people live. According to a report from Indonesia, the disease, which kills a person somewhere every ten seconds, accounts for a high percentage of the deaths in that country.

Since the campaign began the number of new cases of malaria in adults and children has begun to decline, the report states. Among children under one year old, malaria has struck only those who live in dwellings not yet sprayed.

Spray-teams will cover every dwelling about once a year. Dieldrin will provide effective mosquito control during that time. By 1958 the government expects to have the whole malaria area initially covered.

WINS AGRONOMY AWARD

CINCINNATI, OHIO—The Agronomy Club of the University of Illinois, Urbana, known as the "Field and Furrow Club," for the second consecutive year, was named winner of the American Society of Agronomy's National Achievement Award for the best student agronomy organization of its kind in the United States, Nov. 14.

The award, consisting of a trophy and \$100, was presented by Dr. Willard H. Garman, chief agronomist, National Plant Food Institute, to Wayne McDonald of Chester, Illinois. The award is sponsored jointly by the Institute and the Society.

The presentation ceremonies were held in connection with the annual meeting of the American Society of Agronomy at the Netherlands-Plaza Hotel.

USDA Tells Who Owns Country's Forest Lands

WASHINGTON, D.C.—Of the 480,000,000 acres of forest land in the country, about 359,000,000 acres, or 73% is owned by farmers, ranchers, and non-farm owners all walks of life, according to the Forest Service of the U.S. Department of Agriculture.

Some 63,000,000 acres, or 13%, are owned by the forest industries, mainly lumber and pulp companies; another 130,000,000 acres, or around 27%, are under public ownership and of this 17% is in the national forests.

The forest service further pointed out that small forests of less than 10 acres each make up 86% of the total number of private ownerships. In fact, says the service, "The most important class of timberland owner is the American farmer and his fellow citizen. About one out of every 10 American families owns a small forest."

New Sales Director Appointed by U. S. I.

NEW YORK—Alden R. Ludlow Jr., has been named director of sales for U. S. Industrial Chemicals Co., division of National Distillers Products Corp., it has been announced by Dr. R. E. Hulse, vice president of National Distillers and general manager of U. S. I. division. Mr. Ludlow succeeds Lee A. Keane who has just retired.

Mr. Ludlow has been with U. S. I. since his graduation from Yale in 1934, with the exception of several wartime years spent overseas with the U.S. air force. He has been U. S. I.'s manager of alcohol sales for the past 10 years. During his long service with the chemical industry Mr. Ludlow has been a member of and taken an active part in many trade associations. Mr. Keane had been U. S. I.'s director of sales for the past 20 years and had been with the company for almost 30 years.

Du Pont's Sulfuric Acid Plant Begins Production

CINCINNATI, OHIO—Sulfuric acid is now being produced at Du Pont's new Fort Hill works, near Columbia Park, Ohio, about 20 miles downriver from Cincinnati.

This new facility, operated by the Grasselli Chemicals Div. of E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., replaces the last chamber manufacturing process located at the Lockland works, also near Cincinnati. The Lockland works have now been closed, and customers in the Cincinnati area will now be supplied by the new Fort Hill Works, a much larger unit.

The beginning of production at the Fort Hill works is described as the latest step in Du Pont's long-range modernization program of sulfuric acid manufacturing facilities. Since the end of World War II, this program has included construction of a new plant at Richmond, Va., and installation of new manufacturing units at company plants at Cleveland, Ohio; Linden, N.J., and East Chicago, Ind.

The Grasselli Chemicals Department also manufactures sulfuric acid at Toledo, Ohio; Ecorse, Mich., and Wurtland, Ky.

JOINS SOUTHWEST RESEARCH

SAN ANTONIO—Winthrop M. Barnes, chemical engineer and market analysis specialist, has joined Southwest Research Institute's industrial economics staff as process engineer and will advise companies and communities on industrial development. He will specialize in markets, production, process and economic aspects in industrial chemical, petrochemical and related industries.

Better Selling

**Richer
Fields for
Dealers**

A SPECIAL CROPLIFE DEPARTMENT TO HELP RETAILERS IMPROVE MERCHANDISING KNOW-HOW



By RAYMOND ROSSON

County Agent, Washington County, Tenn.

I well remember, way back in one of the erosion years, when I was 12. Dad had me stay home from school to "drop" fertilizer in the checks for corn. He gave me a bucket and asked me to be very careful with the fertilizer in it. He said, "Pick up what you can between your thumb and forefinger, drop it squarely in the check, Uncle Liggins (a colored gentleman) will drop two grains of corn and he will cover it with a double shovel plow."

Do you, Mr. Reader, (I hope some read this) know just how much fertilizer I was applying to the acre? Well, believe it or not, I was applying just about 5 lb. of 16% acid phosphate and that was about 8/10 lb. of P₂O₅ (which stood for promise to overproduce).

Where are we going? In my lifetime I've seen 5 lb. phosphate applied to an acre of row crop to 3,600 lb. per acre on seeding permanent pasture.

When we started our last burley tobacco program in our county we were producing from 900 to 1,000 lb. of tobacco per acre. Last year (1955) our county averaged some 1,950 lb. of burley tobacco per acre.

Plant food made the difference. My guess: "The farmers in 1957 will use more well balanced fertilizer on all crops than they have ever used (that is per acre) and if they can get a normal supply of moisture their yields will be much above the average. We, in our county, are making just about as much corn on 10,000 acres as we did on 20,000 acres two decades ago. We have the other 10,000 acres in alfalfa, and 10,000 head more cattle."

IDAHO DEALER SAYS

Rising Farm Chemical Product Sales Depend on Good Service, Sound Advice

By JESS F. BLAIR
Croplife Special Writer

The Idaho Falls (Idaho) Farm & Home Store entered the agricultural chemical business only a few years ago, but is now doing a business of \$50,000 annually in these lines. This is for fertilizers, insecticides, weed killers and animal health remedies. It does not take into account the allied lines which farmers buy, such as attachments, irrigation supplies and other farm needs.

"It has worked out quite nicely with our other farm supplies," said Jim Wakeman, manager. "We were already selling to hundreds of farm-

ers, so farm chemicals were a natural."

Mr. Wakeman had a lot to do with making it a natural, however. He soon saw that fertilizers and insecticides were a little different from other merchandise. A fellow might put on the wrong thing or use a fertilizer not suited to the local soils and crops.

He decided that to give the farmers proper service, he and the store's employees must learn about these products. Mr. Wakeman began a study of chemicals, reading as much as possible, and talking with company experts, farmers and county agents. He visited farms where he

learned to recognize destructive insects, and note the effectiveness of various fertilizers.

And since he cannot possibly serve every customer, he began educating his staff also. At the store's monthly meetings, he now holds a briefing session on all new products. Even the lady clerks have a fundamental knowledge of insecticides and fertilizer and can converse intelligently on them.

Every summer Mr. Wakeman goes to the University of Idaho for a two-weeks' refresher course in agricultural chemicals, where he learns the new products and how to apply them. He says one of these short courses is the best investment a store owner can make.

Aside from gaining a thorough knowledge of farm chemicals, he proceeds to sell them in much the same way as other merchandise. This calls for a well-arranged store, with neat island displays, and prices clearly printed on the items. In addition, he has prepared several attractive charts which hang prominently on the walls. They explain the various kinds of insects, what crops they attack and the time of year they are expected. The charts also tell the kind of insecticides to use and how to apply them.

Occasionally a farmer will drop in to buy something else, start looking at the charts and then mention that he has noticed a few such insects in his alfalfa or potato fields. After a talk with Mr. Wakeman, he may carry out a supply of insecticides and maybe a sprayer or duster.

Advertising is no little thing in this
(Continued on page 15)



SHOP TALK

OVER THE COUNTER

FOR THE DEALER

By EMMET J. HOFFMAN
Croplife Merchandising Editor

When you hand out those weekly pay checks to your employees, have you ever thought: "Do they know how hard it is to get the money every week so that I can pay these men? Do they realize that this money flows in relation to how we please our customers?"

The employees will not go to the trouble of wondering if you have an easy or hard time getting enough money in each week to pay salaries and all other costs—unless you tell them.

Many an employee will not do more than he is told to do. But there is nothing to prevent a dealer from holding sales training meetings and educating his employees. The first step in this educational process is to make the employee feel important, to make him realize that you need his help so that you can make enough profit to pay his weekly salary among others. That realization gives the employee a real sense of responsibility when it is hammered home enough times.

The average employee wants to earn his keep. He also wants to earn

enough extra to pay some of those additional costs an employer has. He also wants to earn a little more, too, so that you, his employer can have a little profit, just because you fret and worry and work more than an employee and have some money tied up in the investment.

In other words the capacity for responsibility and performance is there—in most employees, but the dealer must do his share to develop it.

What's the alternative? If you don't tell your employees these things time and again, they will think you are paying them their salaries out of that big "reservoir of profits" which you presumably get so easily. They will not realize the problems you have and they will not feel responsible except for a normal amount of work to justify their pay check.

Many dealers say that employees "just don't show any interest anymore in giving a good day's work for a good day's pay." In most instances these dealers do not have sales training programs where they "educate" employees to the hard, cold facts of business, namely that it takes a lot of gross profit to pay salary and other expenses.

Fault May Lie With Employer

If your employees are lax on the job, the fault may lie with you and
(Continued on page 12)

Promotion Ideas Stressed at Oregon Farm and Garden Supply Trade Show

PORTLAND, ORE.—Some 1,000 members of the Pacific Northwest retail feed and seed trade participated in the educational 6th annual garden supply trade show held recently in Portland's Shrine temple.

Sponsored by the Oregon Feed & Seed Dealers Assn., this two-day affair gave retailers a chance to preview new merchandise for spring farm and home garden sales requirements.

Besides 60 booths representing some 50 Pacific Coast distributors and sales organizations there were two meetings where selling and merchandising specialists gave the retailers valuable tips on how they could increase their business and profits. This was the largest number of booths in the history of the show, according to Russ Hays, show manager.

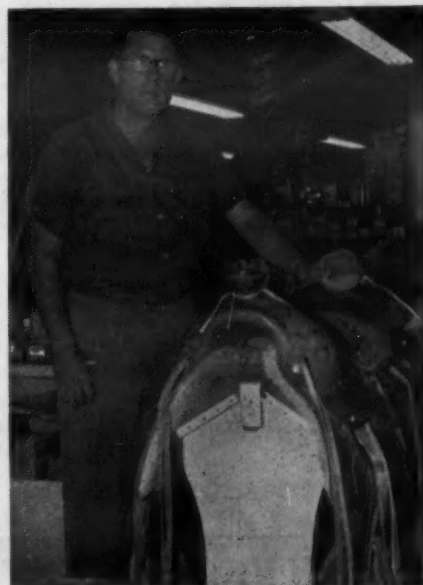
Fred Trullinger, Portland Seed Co. manager, emphasized that farm

supply dealers should talk in terms of cost per acre to the producer rather than costs per pound, since they are buying results.

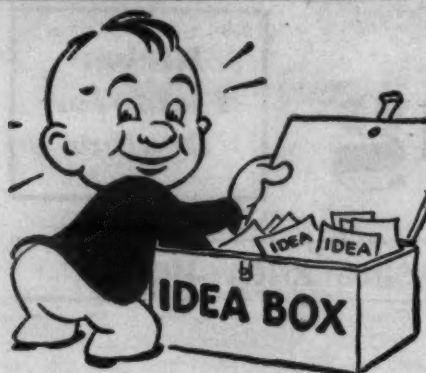
"Farm supply dealers should not be so impressed by dollar volume, but rather by profit at the end of the year. Be honest with your customers and don't try to be the cheapest seller," Mr. Trullinger said. "Dealers should place their sales effort on more profitable merchandise along with controlling inventories so they get a faster turnover."

William W. Marsh, owner of W. W. Marsh & Associates, Portland, emphasized the importance of making more sales profitably through merchandising, customer and public relations. He called attention to the need for more farm supply dealers to make use of sales promotion, market re-

(Continued on page 15)



DRAWING CARD—Since eastern Idaho is a "horse country," Jim Wakeman, manager, Idaho Falls (Idaho) Farm & Home Store finds that a saddle department is an excellent drawing card for his store. The sales of farm chemicals benefit, too, and since they were first stocked between two and three years ago, gross income from the department has grown to over \$50,000 a year.



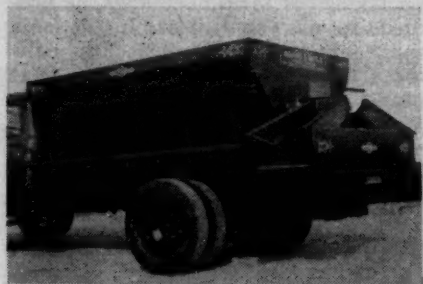
What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6502—Fertilizer Spreader

The Adams & Doyle Equipment Manufacturing Co. announces the production of a fertilizer, lime and phosphate spreader claimed to be rugged enough for custom spreading by dealers and precision designed and built to give many years of dependable performance under any conditions. Gear cases are of hardened steel, with individually cut and spiral matched gears. The 21-in. bottom is said to permit an even spread of materials in any amount from 100 lb. to four tons per acre. Single or double fan units can be interchanged and the fertilizer hood is 20 ft. wide with open ends for extra coverage. For highway travel the hood folds to less than eight feet.



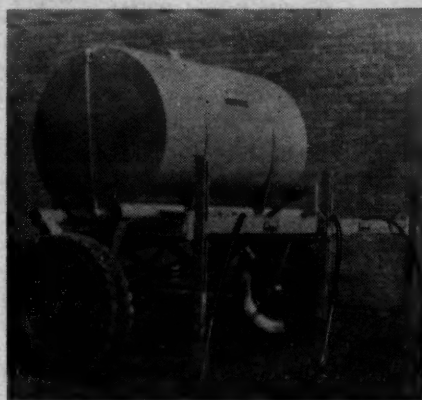
Sizes range from 7 ft. for the ¼ ton pick-up to 12-ft. sizes for tandem trucks. Secure specifications and price sheets by checking No. 6502 on the coupon and mailing it to Croplife.

No. 6504—Fertilizer Scale

A new automatic fertilizer bagging scale, capable of bagging up to 24 sacks per minute, is described and illustrated in a new two-page, two-color product data sheet, No. 5601, now offered by the Richardson Scale Co. The data sheet discusses such features as: Design, automatic belt feeder and discharge, construction, and maintenance. Specifications are listed in a separate table. The data sheet is illustrated with a photograph of the model as well as a dimensional drawing. For a copy of the bulletin check No. 6504 on the coupon and mail it to Croplife.

No. 6503—Applicator

The Larson Machine Co. announces details of its new applicator for applying fertilizers, insecticides and herbicides. The unit is called by the trade name, Larson Trailer-Type unit with Knife Bar applicator. Deep soil applications can be made by the use of the knife bar, company officials state. Lifting the knife bar out of the ground permits the use of the unit as a regular sprayer. The unit has a 220-gal. tank, V-type trailer and pump. The pressure regulator is in front of the tank directly behind the



tractor operator. Details are available by checking No. 6503 on the coupon and mailing it to Croplife.

No. 6505—Emergency Light Unit

A redesigned automatic emergency lighting unit for plants and other buildings where an extra margin of safety is required has been announced by the General Scientific Equipment Co. The unit is powered by a storage battery built into the portable set. A



trickle charger automatically maintains the charge of the battery. A built-in hydrometer indicates the state of the battery at a glance. The unit plugs into an A.C. circuit. The lights are sealed beam and are claimed to provide service for 10 hours. For more complete information check No. 6505 on the coupon and mail it to this publication.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6499—Acid Pump

Dorr-Oliver, Inc., announces the availability of a new two-color, six-page bulletin, "The Olivite Acid Hand-

ling Pump." The bulletin describes the design features, corrosion-resistant materials of construction, applications, sizes and capacities of the acid handling pump. In addition, it contains equipment photographs, cross-sectional wash drawings of the unit and performance and power requirement graphs. The capacity of the pump ranges from 5-1,400 gpm with hydraulic heads up to 120 ft. The extremely wide range of flows and heads is possible through the availability of three pump sizes—1½ in., 2 in. and 4 in., plus a choice of varying diameter impellers. All sizes may be ordered with either direct or V-belt drive and bases for both types. Secure more details by checking No. 6499 on the coupon and mailing it to Croplife.

No. 5592—Bagging Equipment Catalog

A catalog has been produced by the Bemis Bro. Bag Company's packaging service division to describe its bag filling machines, bag closing conveyors and pedestal sewing machines. The catalog is a compilation of 11 bulletins which give specifications, pictures and operational details of three types of sewing machine pedestals, dual head sewing machine pedestal, flat bed conveyor, V-belt conveyor, Vee-Trof conveyor, Vee-Slat conveyor and two models of the E-Z Packer. The catalog is available if you will check No. 5592 on the coupon and mail it to this publication.

No. 6500—Information Cards

Clemson Agricultural College and the extension service have prepared information cards to emphasize their lime and fertilizer program in 1957. The cards are designed for posting in fertilizer dealers' offices. Currently available are cards with the following titles: "How Much Does My Nitrogen Cost?" and "1956 Fall Planting Schedule." The state's agronomist states that "we want our farmers to make efficient use of more plant food and more lime in order to increase the state's farm income." The cards are designed for use by the fertilizer industry representatives for distribution and display. To receive available cards check No. 6500 on the coupon and mail it to Croplife.

No. 6501—Fork Truck

An 8,000-lb. capacity model with dual drive wheels, the EUT-8024, is the newest addition to Clark Equipment Company's line of battery powered fork-lift trucks. A turning radius of 85 in., aisle for right angle stacking (including 48-in. long load) of 148½ in. and over-all length of 133 in. are dimensional features of the machine. With four speeds forward and four reverse, it will travel loaded at 5½ mph and climb a 10% grade, it is claimed. To secure more complete details check No. 6501 on the coupon and mail it to this publication.

No. 6491—Pipe Joint

The Smith-Scott Co., Inc., has developed a new type of steel pipe field joint, which is claimed to reduce the cost of laying pipe in the ground. It is called a "ring-seal field joint." The company states that "the joint embodies a self-sealing rubber gasket, which locks securely into place in a special key-way. This results in considerable flexibility, while guaranteeing leak-proof joints. It is said to be simple enough to be installed by unskilled labor." The joint is made by pushing the spigot end of one pipe three or more inches into the belled end of another, thus placing the "ring-seal" gasket under compression. As the water pressure mounts in its initial flow through the pipe, the gasket moves to one side of the groove and "feathers" out. Once in that position, the joint is claimed to be as strong as the pipe itself. The

Send me information on the items marked:

- | | |
|--|---|
| <input type="checkbox"/> No. 5573—Lift Gate | <input type="checkbox"/> No. 6498—Spray Gun |
| <input type="checkbox"/> No. 5592—Catalog | <input type="checkbox"/> No. 6499—Acid Pump |
| <input type="checkbox"/> No. 6491—Pipe Joint | <input type="checkbox"/> No. 6500—Information Cards |
| <input type="checkbox"/> No. 6492—Catalog | <input type="checkbox"/> No. 6501—Fork Truck |
| <input type="checkbox"/> No. 6493—Booklet | <input type="checkbox"/> No. 6502—Spreader |
| <input type="checkbox"/> No. 6494—Soil Conditioner | <input type="checkbox"/> No. 6503—Applicator |
| <input type="checkbox"/> No. 6495—Booklet | <input type="checkbox"/> No. 6504—Scale |
| <input type="checkbox"/> No. 6496—Process Control | <input type="checkbox"/> No. 6505—Light Unit |
| <input type="checkbox"/> No. 6497—Valve Closure | |

NAME

COMPANY

ADDRESS

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

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Minneapolis 1, Minn.

company's pipe equipped with the new joints is sold in diameters of 4-20 in. and in lengths up to 40 ft. The joint also allows from 4-6° deflection. More complete literature on the joint is available. Check No. 6491 on the coupon and mail it to Croplife.

No. 6496—Process Control

A new 16-page catalog on pneumatic instruments for process control has been published by United States Gauge, Division of American Machine & Metals, Inc. Catalog No. 505 discusses indicating pilots, transmitters and receiver gauges. A new instrument shown for the first time in the catalog is the 3½-in. scanning diaphragm receiving gauge with rotatable dial which permits the operator to rotate the dial to a common set point. The pilot is claimed to be unique in that it provides both input and output gauges and features a large dial showing both set point and process variable. Complete information is contained on measuring elements for pressure and temperature applications. Ordering information, dimensions and typical dial faces are also included. Check No. 6496 on the coupon and mail it to Croplife to secure the catalog.

No. 6494—Soil Conditioner, Nutrient

The Paxton Processing Co., Inc., has announced details of its product, called by the trade name Paxco Topper, a soil conditioner and plant mulch. The product is compounded from dehydrated corn cob meal, treated to kill weed seeds and mold spores and dried for lower shipping expense. Nitrogen is added to balance the nutrient requirements of bacteria which transform the product, on or in the ground, into humus. Advantages claimed for the product are: It will keep down grasses and weeds in shrubs; it is an insulating blanket which holds moisture in the soil; it converts into humus when spaded into the soil; and it conditions the soil. Company spokesmen say the product is priced to compete with mulches and humus. Secure more complete details by checking No. 6494 on the coupon and mailing it to Croplife.

No. 6492—Test Gauge Catalog

A new 8-page catalog just published by United States Gauge, Division of American Machine & Metals, Inc., deals with the selection of test gauges, also cataloging a variety of test gauges for various applications. The publication (No. 400) provides a list of check points for ordering pressure gauges, and is available by checking No. 6492 on the coupon and mailing it to Croplife.

No. 5573—Lift Gate

The Anthony Co. announces that a light weight lift gate model is now available for larger trucks handling light, bulky loads. The gate has a loading area of 82 by 30 in. and a lifting capacity of 1,000 lb. One hydraulic cylinder does the lifting and lowering and is powered

either by a battery driven pump or a power take-off and pump combination. Loading and unloading can be done from the side even at curb level. The lifting and lowering operations are controlled by one lever from either side of the truck. The gate stops automatically at ground and truck floor levels or can be stopped and held at any intermediate height. For more information on the lift gate, send for the new folder, "Automation For Transportation." There is no obligation. Check No. 5573 on the coupon and mail it to this publication.

No. 6495—Copper Oxide Booklet

The Calumet Division, Calumet & Hecla, Inc., announces a new booklet on "Calumet Brown Copper Oxide—Fertilizer Grade." The booklet on the concentrated source of copper for fertilizer mixtures and direct soil applications describes brown copper oxide in detail and shows where and how it can be used most economically. It also highlights the research and experimental programs carried on its behalf. The booklet may be obtained by checking No. 6495 on the coupon and mailing it to Croplife.

No. 6493—Electrostatic Dusting

Agricola, Ltd., has prepared an 8-page booklet entitled, "Electrostatic Dusting." Electrostatic dusting uses the principle of electrostatics as a method of applying crop protection chemicals. The booklet states that the basic principles underlying electrostatic dusting are contained in the two axioms that "like forces repel, unlike forces attract," and that "an electrical force induces an equal and opposite charge at an equal distance on the other side of a conducting surface." The instrument designed by the company for this type of dusting is called by the trade name, "Agricola Electro-duster." The booklet states that the unit greatly increases dust deposits, produces equal deposits on both sides of the leaf, provides complete and even distribution and a 50% savings in outlay in chemicals. Secure more complete information by checking No. 6493 on coupon and mailing it to Croplife.

No. 6497—Valve Closure

An automatic valve closure which the manufacturer, Hudson Pulp & Paper Corp., says virtually eliminates sifting from multiwall bags has been developed, and is scheduled for immediate introduction for use. The Hudson product is known as the Seal-O-Matic Sleeve. It is an insert to be used in the loading of pulverized, granular, crystal and pellet-type products. Company officials say that the device will be effective in the loading of fertilizer, chemicals, lime and other products for which, at present, the annual loss from sifting is high. To secure more complete details check No. 6497 on the coupon and mail it to Croplife.

No. 6498—Insecticide Spray Gun

The R. C. Can Co. has introduced an insecticide spray gun with a number of new features. Among the features claimed are: It sprays the insecticide at an extreme angle for hitting the underside of foliage; 15 holes on the underside of the discharge plug eliminate clogging; a 1½-in. friction plug comes off for refilling; it has a wax coated inner tube; it has a special felt inner valve and a patented bellows valve. Secure additional information by checking No. 6498 on the coupon and mailing it to Croplife.



RINGING THE cash register

Merchandising Hints for The Retailer

Successful Institute

A farmers' institute co-sponsored recently by the Bethel Feed & Produce Co., Anoka, Minn., and the Anoka County, Minn., extension service was attended by 200 farmers and their wives. The all-day event included a talk by an extension specialist on poultry who urged more efficient management and stressed automatic waterers as a valuable labor saver. The county's 4-H Club agent briefly summarized the work of 4-H clubs. An extension agronomist discussed modern corn raising methods and the county agent explained the proper procedure for taking soil samples to determine fertilizer need. Other speakers discussed family gardening, home freezing and crop drying. Wendell Ledin, owner of Bethel Feed, states that the institute was a worthwhile event for his firm to co-sponsor and that it produced many new friends and prospective customers.

Classified Ads Pull

Merchants should not underestimate the sales-making power of classified advertisements. Classified ads are generally most effective for stressing one particular item which the dealer wishes to emphasize. It may be wise to repeat the classified item for several days or weeks. Many dealers say that classifieds are the most effective method of advertising, considering their cost.

Direct Mail Rated No. 1

Direct mail is "our choice of advertising" says one dealer. "From time to time, we test the drawing power of our mailing pieces to determine if direct mail is worthwhile. The tremendous response that we get from direct mail shows us that we are channeling our money into the right advertising media," he continues. Response as high as 75% of his mailing list of 500 farmers has been counted when the offer of a free gift was mentioned on a post card. The dealer firmly believes in free offers, such as a fly swatter, a clothes pin bag or a pencil to bring in traffic into the store. The offers are usually announced by direct mail. Three types of direct mail pieces are used: The mailer provided by one of his suppliers which is institutional advertising; the second which goes to all boxholders in the county, and third which is prepared in his own store, such as a mimeographed post card or letter to his selective list of 500 customers.

Feed Store Costs

Sales promotion expenses per dollar of sale varied from 3.8¢ to 5.7¢ for four Illinois retail farm stores examined in a survey. Physical handling expenses ranged from 1.5¢ to 3.9¢ while the office (bookkeeping) expenses varied from 1¢ to 2.7¢. Delivery expenses ranged from "no cost" in one instance to 3.8¢ for another store. Included as sales promotion expenses were selling activities of clerks, advertising, farm visits and donations.

Ranking of Failures

Dun & Bradstreet, Inc., has published a list of 22 selected retail lines of trade ranked in the order of numbers of failures per 10,000 concerns, during the 12 months ending June 1, 1956. Infants' and children's wear, 179 failures per 10,000 concerns; women's ready-to-wear, 126; men's wear, 118; sporting goods, 106; women's accessories, 97; furniture, 79; appliances, radios and television, 73; bakeries, 65; gifts, 62; cameras and photographic supplies, 59; lumber and building material, 56; shoes, 48; jewelry, 45; dry goods and general merchandise, 41; books and stationery, 35; eating and drinking places, 31; automobiles, 30; auto parts, accessories and tires, 29; groceries, meats, produce and other products, 24; drugs, 23; hardware, 23; farm equipment, 20.

Is He Satisfied?

Closing the sale is not the end of a transaction. It is successfully over when the customer has achieved complete satisfaction with the product he purchased. There is no substitute for customer satisfaction.

No Good in The Office

Stuffers promoting farm chemicals and related products accompany all monthly billings sent out by one farm store operator who says, "We don't believe in keeping this material lying around the office. It won't do us any good there. But in the customer's hands or in his home, we have a sales possibility." Literature is also sent to non-customers by this dealer and every package leaving the store has a stuffer accompanying it. A supply of advertising material and stuffers is also carried in delivery trucks and drivers are instructed to leave copies with every delivery.



handling light, bulky loads. The gate has a loading area of 82 by 30 in. and a lifting capacity of 1,000 lb. One hydraulic cylinder does the lifting and lowering and is powered



Doing Business With

Oscar & Pat



By AL P. NELSON
Croplife Special Writer

When Oscar Schoenfeld, the frugal, balding and pot bellied partner of the Schoenfeld & McGillicuddy team came into the office after lunch, he took in practically everything in one sharp glance. It was Oscar's ingrained nature to watch everything that was going on—especially if what was going on threatened to send store operating costs up and profits down. Oscar believed that you had to watch everyone in this world, so that they didn't slip anything over on you to their benefit and your loss. He also believed he had to watch his business partner especially close. Which meant, of course—long, lanky, blue eyed Pat McGillicuddy.

"A partner like that, ach, could make a firm bankrupt in three months, maybe even one, if there wasn't somebody like me to watch him," Oscar often complained to Minnie, his meek, nervous wife.

"But—" protested Minnie, aware of the fact that somehow, despite that terrible spendthrift Pat, the firm of Schoenfeld & McGillicuddy continued to prosper month after month.

"But, nothing," Oscar broke in as if to read her thoughts. "I know what is right and he don't. Does it make profit for us—that's what I believe? But Pat don't. He just goes on spending and spending."

Today, as Oscar looked around the office after lunch, his eagle eyes quickly spotted two large paper carton packages, standing unopened near a counter.

"What's this?" he asked sharply, going over and peering at the packages.

"I don't know," replied plump Tillie, the bookkeeper, who was addicted to ulcers, as a result of hearing so many quarrels between Oscar and Pat.

"These packages are addressed to Pat," grunted Oscar, "and they are from the ABC Plastic Co. Ach, there must be a mistake. We don't sell plastics. We sell fertilizers and insecticides."

Oscar looked at the clock. It was now 1:15 p.m. Always curious, he gazed at the packages again. "Ach, I wonder what is in them," he said. "Maybe I will have a look. We can still send them back."

"Mr. McGillicuddy might not like it," Tillie offered timidly. "He's—he's kinda funny about things like that, especially when they are addressed to him."

"I don't care who they are addressed to, so long as it says this firm name, too," Oscar said stubbornly, taking out a jackknife. "I have to pay half of what that Irisher buys. And I want to know."

So Tillie said nothing while Oscar cut the middle of one paper carton and opened it. He took out several stuffed newspapers, and then brought forth a handful of long yellow plastic objects. "Vas ist los?" he exclaimed. "This is not for us."

Now it was Tillie's turn to come closer. She picked up one of the plastic objects and inspected it. "It says here that it's a rain gauge," she explained. "Oh, isn't it cute? I'd like to have one."

Oscar's face got slightly red. "Rain gauge! How much rain does that Irisher expect? A flood? How can we use all these rain gauges?" He snorted. "Ach, ain't that just like him? He needs one item of a thing, and he

orders a coupla hundred just to make sure he has enough. My God, what a partner I got." He slapped his hand against his forehead. "Well, we can send them back. We can keep one. No, we'll send them all back."

By the time Pat got to the office a few minutes later, he heard Oscar calling the express company asking them to call for a shipment, namely the plastic rain gauges which were going back to ABC Plastic Co. "We'll take the shipping charges off Pat's salary, too," he announced to Tillie, who was getting very nervous. "Rain gauges. What does McGillicuddy want to do with this store, turn it into a five and ten cent outfit?"

"Not quite that, Oscar," said Pat levelly, not taking a seat, his grey felt hat thrust back belligerently on his head. "Those rain gauges stay here. They're for this business. Just tell that express man to forget about sending them back. If you won't I will."

"I won't!" Oscar said emphatically. "Ach, I stand on my word."

Pat sighed, and one could almost hear him counting ten, as his wife Nora told him to do when he had an argument with his partner. "Oscar," he said very slowly, "I am running an ad this week offering a free rain gauge to any farmer who comes in here and gets it."

"Free?" bellowed Oscar. "Why give them away free? Ach, Himmel, if you must keep them, charge them for it."

Slowly Pat shook his head. "No, Oscar, every farmer needs a rain gauge. Farmers are always talking about the rain, wondering how much each rainfall brings. If they have our rain gauge they'll remember who gave it to them. And rain and fertilizer go together. You know that."

"Yah," said Oscar scornfully, "the farmers get the rain gauges and we get nothin'. That's what."

"They must come to the store to get this gauge," Pat said, "and if I know farmers they'll come from great distances just to get this one free item. When they step in this store they'll see lots of signs urging them to place orders now for spring fertilizer, and take advantage of the early order discount. And we will talk to them about buying fertilizer, too. We will get farmers in here that would maybe never come here otherwise, except to get something free."

"Then why bother with them?" Oscar asked red faced with anger.

"Because in business you always have to try to keep attracting more customers to your store," replied Pat persuasively. "New customers as well as old ones. By getting them into your store, they get to know you better than ever, and maybe they'll buy."

"We know too many of them too well now," Oscar retorted. "Ach, you will fill our store with a bunch of deadbeats from all over the country. I had better put a logging chain around the cash register, if them fellows come around."

"Oscar," reprimanded Pat sharply, "you are too suspicious of other people. You should trust them more. About 98% of all customers are honest, they say. It's only 2% that mean to skip without paying their bills."

"Ach, we got all the 2% from the whole county," Oscar growled. "Just look at our bills. They stand on your desk, waitin' to be collected and you

don't do it. Yah, if only you would take a big long vacation from this business, I would put it in good shape I tell you. I would cut down on shelf stock. I would collect bills. I—"

"If I left you alone with this business for one month there would be no business left at all when I came back," Pat said sharply. "Excuse me, I can't stand the heat in here any longer. I'm going out for another cup of coffee."

Oscar, his mouth agape, watched his partner leave. There was a hurt look on his face. "Did you hear him, Tillie?" he asked the bookkeeper. "He said if he went away for a month and let me run the business when he was gone, it wouldn't be here when he came back. Ach, he said there would be no business." He frowned. "Tillie, what did he mean by that?"

Tillie, her ucler seething, as it always did when the two partners argued, looked up. "I don't know," she said. But she did, and figured one fight for the day was enough.

Fertilizer, Drainage Triple Yield for Minnesota Farmer

SAUK RAPIDS, MINN.—Plenty of fertilizer and a good land drainage system can sometimes be just as profitable as three times as much cropland.

For B. A. Ackerman, dairy farmer in Benton County, Minnesota, fertilizer applied by "prescription" and a series of drainage ditches has nearly tripled crop yields since World War II.

In 1944, Mr. Ackerman moved onto a 160-acre farm that hadn't been touched with fertilizer before. About 20 acres of otherwise good fields were so poorly drained that after a hard rain, the fields would be covered with water for a day or more.

During his first year on the farm, Mr. Ackerman's yields averaged about 30 bu. for oats, 35 bu. for corn and about a ton and a half of hay per acre.

Now, he regularly gets 80 bu. of corn, 75 bu. of oats and about 4½ tons of top quality alfalfa per acre, thanks to more fertile soil and no more trouble with standing water. In an X-Tra corn yield contest plot last year, Mr. Ackerman had a 93.5 bu. yield—the third highest in his area of the state. His yield should go at least as high this year. The average corn yield in Minnesota is 49 bu. per acre.

Mr. Ackerman uses a lot of fertilizer and finds that it pays off. For corn, he plows down 200 lb. of 10-10-10 or 12-12-12 per acre, then puts on 160 lb. of 4-12-24 on each acre with the corn planter. He sidedresses with ammonium nitrate. The first time he tried sidedressing—about five years ago—he found that for every dollar's worth of nitrogen he added, he got two dollars worth of extra corn.

When Mr. Ackerman plows the corn stubble down for grain, he adds another 200 lb. of 10-10-10 per acre, then adds another 150 lb. of 4-12-24 or 5-20-20 per acre with the grass seed, which he applies with a combination seeder and fertilizer spreader. His seeding mixtures include alfalfa, brome grass, birdsfoot trefoil, and orchard grass. All fields on farm get limed once every rotation, or once every 5-6 years.

OVER THE COUNTER

(Continued from page 9)

your failure to keep reminding them of their duties toward creating their own pay checks through the work that they do for you. This is one of the most neglected steps in retailing.

One Indiana farm supply firm conducts an actual employee rating program. When the time comes for awarding bonuses to various employees, the dealer invites the employees to rate one another. In other words, employee A rates employee B and Mr. E. rates Mr. A. The rating sheet given each employee by the dealer contains a lot of confidential stuff. Some of the questions are: "Is this employee loyal? Does he apply himself diligently to the job at hand when the boss is not around? Does he try to absorb and apply latest feeding knowledge? Is he courteous and helpful to customers? In what respect do you think he can improve?"

By the time one employee has through rating a fellow employee, he has set down enough answers so that the dealer can get a pretty good overall picture of each employee and square these reports with his own opinion of each. An employee cannot "fake" such a test. Too many "yes" answers would look as if he were recommending the other employee too highly, without thought. So employees usually consider each question carefully and put down honest answers.

Discuss Your Operating Costs

Without revealing the figures, every dealer can very profitably discuss his operating statement once or twice a year at a sales training meeting. He can read the various items that make up his overhead. In some instances he could quote figures, such as amount of power bill, phones, advertising, truck repairs, mill repairs, adjustments, depreciation, state and federal taxes and insurance.

As these figures are read, employees will see just how many dollars flow into the plant from sales which cannot be directed toward the paying of salaries. They must be earmarked for other costs. Employees for the most part, too, will realize that there is a necessity and an obligation on their part to do more selling and more servicing so that more sales can be made to pay all these costs and to provide extra profits out of which he or she may get a future raise in pay.

If these facts are not translated to the employee in terms which he can understand he is going to vastly overestimate the profit you are making and underestimate the amount of work he needs to do to carry his share of the "cost" load.

Range Fertilization Boosts Sheep Gains In California Tests

HOPLAND, CAL.—Half-starved rangeland pastures produce half-starved sheep.

But fall fertilizer applications can speed forage growth during the cold, rainy period of the winter when the sheep cannot get enough to eat on native ranges, says Milton B. Jones, agronomist at the University of California's Hopland Field Station.

In tests at the station during this past winter and spring, sheep on unfertilized, native rangeland lost nearly 10 lb. in the winter and continued to be 10 to 15 lb. lighter than their relatives on improved, fertilized pastures. This weight difference continued through weaning time in late May, Mr. Jones said.



U.S. Department of Agriculture studies reveal that fertilizing such crops, especially corn, can increase the average yield of nitrogen per acre. The same is true for other crops, such as soybeans and clover.

University of California studies are also showing that the Yuma Valley controls crop, according to extension planters. Four new varieties of Yuma alfalfa are being tested for improved land use, and the alfalfa leaves are being used for cattle feed.

In one study, alfalfa will produce 10 tons per acre with PCNB. Spraying alfalfa with PCNB increases the yield of alfalfa by 10 to 15 percent. The alfalfa is then used for cattle feed.

Best results are obtained with 2,4-D just before the alfalfa is cut. Keith M. Jones, assistant manager of Agriculture, in an article in the September issue of the magazine, "Results of the alfalfa article show that alfalfa yields are increasing."

Trials on alfalfa urea have produced results, Dr. R. Jones, and his colleagues at the University of California's Hopland Field Station.

The scientists who want to see two sprays of alfalfa compounds. If a single spray of urea (40 lb.)



FARM SERVICE DATA

Extension Station Reports

U.S. Department of Agriculture studies reveal farmers generally are willing to spend money and time fertilizing such crops as vegetables but actually neglect hay, pasture and cover crops.

A recent survey showed that, on the average, farmers use 68 lb. of nitrogen per acre for green and yellow vegetables and 83 for potatoes.

But they averaged just one pound of nitrogen per acre of hay and four-tenths of a pound for pasture and cover crops.

The same pattern was true, with slight variations for phosphate and potash fertilizers.

University of Arizona plant pathologists are launching experiments in the Yuma Valley this fall in search of controls for Sclerotinia rot, or drop, according to Dr. Ivan J. Shields, extension plant pathologist at the university.

Four new treatments are to be tried at Yuma. They include flooding infested land for 30 days before planting, and the use of dusts and sprays after lettuce has emerged but before lower leaves droop enough to touch the soil.

In one spray treatment, the soil surface will be thoroughly drenched with PCNB. There will be another spray treatment involving the use of wettable sulfur, put on in sufficient strength to leave a thin film on the soil beneath the lettuce heads. The last treatment, using copper oxide, is to be applied in the same manner.

Though still a constant threat to vegetable growers, drop is not so serious as it was a few years ago. In Yuma County the disease is still causing extensive damage, however. Last season an estimated 400 acres of lettuce were abandoned because of drop. In many cases, only a portion of the crop could be harvested.

Best results from spraying halogen with 2,4-D are obtained by spraying just before the plant flowers, says Keith Miller, graduate research assistant, Max C. Fleischmann College of Agriculture, University of Nevada, in an article published in the September issue of the "Journal of Range Management" magazine.

Results of spraying with 2,4-D after flowering did not give as good results, the article stated. While the before-flowering did not have as good effect, however, a significant reduction of plants was noted.

Trials on strawberries using water-soluble urea as a source of nitrogen have produced some outstanding results, Dr. R. M. Bullock, superintendent and horticulturist at the Southwestern Washington Experiment Station in Vancouver, says.

Dr. Bullock reports that spray applications of this material increased yields as much as 1½ tons an acre.

The scientist suggests that growers who want to use urea may make one or two spray applications of commercially available water-soluble urea compounds.

If a single application is made, the rate of use suggested is 90 lb. an acre (40 lb. of actual urea nitrogen).

Two applications, each of half this amount, may be made 10 to 15 days apart. Some leaf burn occurs when a single application of the full amount is used.

In trials at Vancouver the urea was applied about Aug. 20 in the past two years. Only a single application was used.

New growth was burned to some extent, but the plants did not seem

to be hurt seriously and yield data indicate that the damage was temporary in nature.

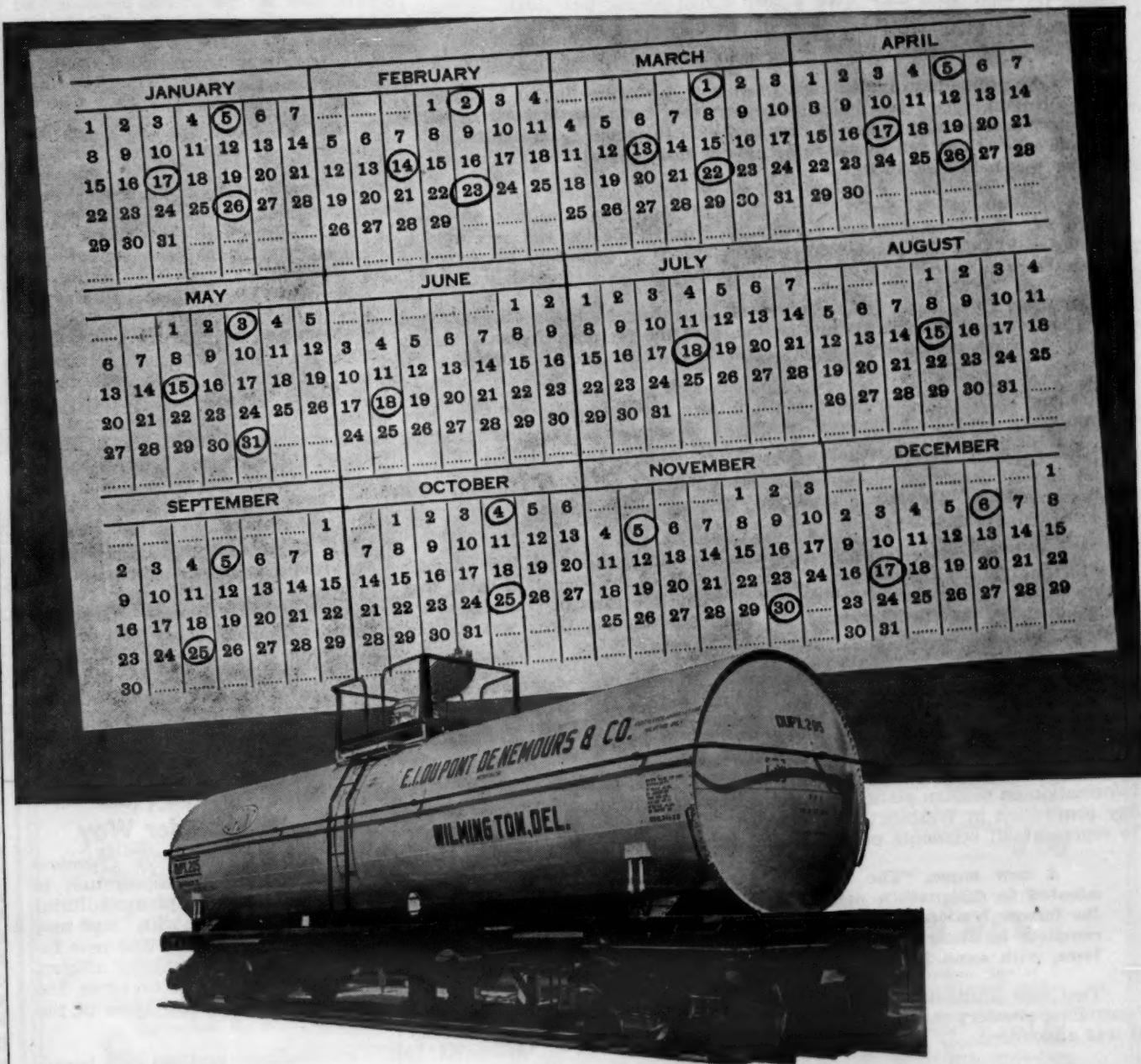
Applying commercial fertilizer gives increased yields, lower per unit production costs and more crop residue to turn back to the soil, according to Dr. Paul C. Christensen, extension soil conservationist at Utah State Agricultural College. When plant foods are needed, crops will make more efficient use of water if fertilizer is applied.

Dr. Christensen says experiments in Utah have demonstrated that fertilizer may double yields of corn without increasing water requirements. Tests with alfalfa in Utah have shown that adding phosphate fertilizer to phosphate-deficient soils can greatly

increase yields with no increase in water applied.

"Misconceptions about fertilizer often hinder its use. Some have assumed that fertilizer is poisonous to organisms in the soil. But it isn't. In many cases bacteria and other organisms actually increase with the use of fertilizer. The layer volume of crop residues produced as a result of fertilization provides increased food. Organisms greatly multiply while decomposing the material," Dr. Christensen says.

Plants grown in fertilized soil are often more nutritious than those grown without fertilizer. Some reproductive problems with farm animals have been corrected by the application of superphosphate to hay and pasture land.



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Better Selling

Richer Sales Fields for Dealers

What's Been Happening?

This column, a review of news reported in *CropLife* in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

The American Potash Institute reported that deliveries of potash materials for the first nine months of 1956 were about 3% over that of the same period in the previous year. Total deliveries by U.S. potash producers and importers amounted to 2,781,593 tons, the report said.

Greater selling efforts and the development of new markets will increase the use of anhydrous ammonia, members at the sixth annual meeting of the Agricultural Ammonia Institute were told at the Atlanta convention. More than 500 persons were in attendance at the meeting.

Production of various chemicals used in agriculture was reported by the U.S. Department of Commerce to be on the increase, for the most part, during the first half of 1956. However, stocks of many of the materials, as well as finished goods were apparently at higher levels at the end of the summer season than they were a year ago.

Lion Oil Co. division of Monsanto Chemical Co. announced that construction had begun on its new nitric acid concentrator at El Dorado, Ark.

The Canadian Agricultural Chemicals Assn., meeting at Niagara Falls, Ont., heard first hand testimony from Canadian farmers as to why some make full use of chemical aids to farming, on one hand, and why others fail to use these aids in their operations. The meeting was held Oct. 16-18.

W. F. Price, Swift & Co., Plant Food Div., in an article first presented before the American Assn. of Fertilizer Control Officials, and reprinted in *CropLife*, said that the plant food industry stands to gain very little from a change from calculating in terms of the oxides to the elemental.

Dr. Earl Butz, assistant secretary of agriculture, told the Middle West Soil Improvement Committee in Chicago, that the fertilizer industry stands to gain as much as 350,000 tons of fertilizer in extra sales through the soil bank.

Lamar Ratliff, 17-year-old Mississippi farm boy, harvested 257.1 bu. corn from a single acre, for his second-best try in a number of years. (His record was 304 bu. in 1955.)

A new parasitic weed, *Striga*, has been found in South Carolina, the USDA announced. This weed, if allowed to spread, can cause great damage to corn and sugar crops.

A new model state fertilizer bill, which would change fertilizer guarantees for phosphorus and potassium from an oxide to the elemental basis, was approved by the Association of American Fertilizer Control Officials at its annual meeting in Washington. J. D. Patterson, Salem, Ore., was elected president of the group.

E. O. Burroughs, Jr., Royster Guano Co., Norfolk, Va., was named chairman of the fertilizer section of the National Safety Council . . . Harry J. Fisher, New Haven, Conn., was elected president of the Association of American Pesticide Control Officials.

The meeting of the fertilizer industry round table brought out up-to-date information on modern plant food manufacturing techniques during its three-day convention in Washington, D.C. About 300 persons were in attendance to represent all segments of the manufacturing industry.

A new name, "The National Fertilizer Solutions Assn." was adopted to designate a new group formed by the consolidation of the former National Nitrogen Solutions Assn. and a group of liquid complete fertilizer makers. The convention was held at Sioux City, Iowa, with some 300 persons registered.

Two new antibiotics, Anisomycin and Griseofulvin were successful in controlling powdery mildew of snap beans in greenhouse tests by the USDA, it was announced.

A U.S. Department of Agriculture survey turned up additional areas in New Jersey, Pennsylvania and New York that will need gypsy moth control measures in 1957. Plans call for from two to four times as much insecticidal spraying in 1957 as in 1956. . . Consignment selling and guaranteed merchandising sales were condemned during a session at the annual meeting of the Carolinas-Virginia Pesticide Formulators Assn. in Pinehurst, N.C.

Chemical Lime Co. of Oregon planned to build a \$1,250,000 chemical lime plant at Portland, Ore. Available lime is sufficient to supply the needs of the Pacific Northwest for the next 60 years, a company spokesman declared. Production will be 75,000 tons a year.

Grasshoppers posed a serious threat in New Mexico for 1957, on 2½ million acres of rangeland, and 196,000 acres of croplands in the state. A wide area of the state is affected in the insect threat.

The U.S. Tariff Commission reported that production of synthetic organic chemicals in 1955 was up 22% over the output of 1954. Pesticides and other organic chemicals exceeded the production of 1954 by 21%, the report said.

That unusually heavy populations of grasshoppers are present in Colorado, was found in recent surveys in the state. Some 438,000 acres of cropland were said to be infested with the insect, giving rise to predictions that next year will see major infestations. As always in making such predictions, the weather must be taken into consideration, according to Gordon Mickle, A&M College entomologist, but under conditions favorable to the development of grasshoppers, 1957 could see unusually heavy infestations.

Demand Continues For CFA Handbook

SAN MARINO, CAL.—The Western Fertilizer Handbook, a publication of the Soil Improvement Committee of the California Fertilizer Assn., continues in strong public demand, according to the committee. The handbook is now in its second edition. More than 22,000 copies have been distributed since its first appearance in September, 1953. Earle J. Shaw, chairman of the handbook subcommittee, reports that many orders are received each day from various portions of the civilized world.

The handbook is a reference work of importance to all persons interested in soil fertility and plant nutrition, whether they be working farmers or home gardeners, he said. The text was prepared by a qualified committee of experts in the field, but in the least possible technical terms so as to constitute an easy-to-understand guide for the general public.

The book contains 160 pages and features 12 color plates, most of which depict plant food deficiency symptoms and many black and white illustrations. A useful glossary of tables, terms and conversions is included. The 12 chapter headings are: Western Agriculture and Attitudes; Soil and Water (which contains 17 sub-headings); Organic Matter; Inorganics vs. Organics; the Plant—The Cell; Plant Food Elements; Diagnostic Tests for Soil and Crop Problems (inclusive of soil and plant tissue testing); Commercial Fertilizers and Agricultural Minerals; Use of Fertilizers; Western Laws Relating to Fertilizing Materials; History and Purpose of California Fertilizer Assn.; Economic Importance of Fertilizers.

Mr. Shaw said that the Western Fertilizer Handbook can be purchased in single or multiple copy orders through the California Fertilizer Assn., 475 Huntington Drive, San Marino 9, Cal. He added that all orders must be accompanied by remittances to cover them in full. The price is \$1 per copy, including tax and mailing charges.

Stauffer's Arizona Plant Getting Well Under Way

NEW YORK—Stauffer Chemical Co. has established another unit in its 17-plant network of agricultural chemical facilities, with its new plant at Phoenix, Ariz. The new facility, according to company officers, was set up primarily to serve the rapidly-developing farm areas of the state.

The company explains that heretofore, the Arizona market was supplied through shipments of agricultural chemicals into the state from Stauffer's Los Angeles plant. Now, the new plant will compound and formulate a range of specialties which will serve the entire state.

"As is the case of other Stauffer agricultural chemical units, the Phoenix project will operate as a relatively autonomous regional enterprise," a company spokesman says. He adds that "It will have available to it, however, the production experience of the entire company and the technical service and research resources of the Stauffer organization."

NEW DEVELOPMENT ENGINEER
LOS ANGELES, CAL. — Joseph Adinoff has been promoted to senior development engineer of American Potash & Chemical Corp., according to an announcement by H. B. H. Cooper, director of development engineering for the company.

Changes in Ratio Importance Noted In Texas Report

COLLEGE STATION, TEXAS—Fertilizer sales in Texas during the first half of 1956 totaled 372,695 tons compared with 375,177 tons in a corresponding period a year earlier, according to J. F. Fudge, state chemist.

The 1956 figure included 197,000 tons of mixed goods and 175,682 tons of materials.

In commenting on the figures, Fudge noted that mixed goods accounted for 53% of the total tonnage sold during the first half of this year compared with 55% in the first half of 1955. Actual tonnage of mixed goods was 5% below that of last year.

"However, highly significant changes in the relative importance of individual ratios and grades of fertilizer sold are evident," Dr. Fudge said.

"Highly significant decreases occurred in the sales of all grades with out nitrogen. Part of this trend is due to increased availability of nitrogen materials and part to a growing realization of the essentiality of nitrogen for all purposes.

"Grades of the 1-2-1 ratio accounted for two thirds of the mixed goods tonnage. Goods of the 1-1-1 ratio accounted for one eighth of the tonnage.

"Highly significant increases occurred in the tonnages of higher analysis of the ratios sold in the state. For example, sales of the 5-10-5 grade were over 20,000 tons lower than those of 1952, but over 43,000 tons higher analysis grades of the 1-2 ratio were sold this year, as compared with only 19,000 tons five years ago.

"Over the five-year period sales of the 10-10-10 and higher grades of the 1-1-1 ratio have increased greatly."

Research Results Heard at Farm Day In New Mexico

STATE COLLEGE, N.M.—Reports of several agricultural chemical research projects were presented at New Mexico A&M specialists at the college's Farm Day held here recently.

Application of fungicidal chemicals at time of planting, usually known as "in-furrow" treatments, holds promise of protecting young cotton plants from various seedling disease organisms in the soil that often cause skippy stands, the researchers said. Fungicides which appear promising in greenhouse tests include Pentachloronitrobenzene and the organic mercurials.

Chloropicrin, a fumigant-type chemical, controls verticillium wilt and further research on factors involved in rates application, duration of effects, etc., will be carried on.

Alanap, a promising chemical for the control of annual grass in irrigated cotton, is now available commercially and has been cleared for use in New Mexico. It has proved 95% effective in preventing annual grasses from becoming established, it was stated.

Results of weed control in cotton experiments indicate that the use of chemicals and flame cultivation are very effective and could eventually replace hand hoeing. Researchers checked three methods of control—chemicals and cultivation, hand hoeing and cultivation, and hand hoeing and cultivation, and hand hoeing and cultivation against cultivation only to determine the effectiveness of the methods and their effect upon yield, mechanical harvesting efficiency, trash content and grade of cotton.

Green Blanket With Fertilizer Recommended

COLLEGE STATION, TEXAS—If rains this fall and winter change blowing dust to flowing mud on farms, Texas A&M College agronomists say the soil may need weatherproofing. The weatherproofing suggested is a green blanket with proper fertilizer treatments. The blanket can be made of any close growing crop such as vetch, winter peas or one of the adapted clovers. If a legume is not desired, any close growing crop such as oats, rye, barley or wheat will provide weatherproofing, the agronomists state.

TRADE SHOW

(Continued from page 9)

search, merchandising, advertising and personal selling.

"Each retailer will be money and time ahead if he takes time out ever so often to put an imaginary mirror in front of himself and his store. He should then ask himself how he can increase the number of customers by better merchandising and salesmanship," explained Mr. Marsh.

Ways of using the telephone to increase farm supply business were discussed by Kelly Snow, sales director for Don Williams, Inc., printers, Portland. He emphasized general techniques of good telephone usage applied to every employee.

Mr. Snow said sales of fertilizer, insecticides and other farm supplies can be increased by the use of outgoing calls. This executive suggested retailers call customers who haven't been in their store for sometime and tell them of new items being offered. He also pointed to soliciting seasonal business by phone or getting new customers by calling neighbors of customers listed in the telephone company's "red" book under street address rather than name.

Lee Fryer and Dick Simmons of Chas. H. Lilly Co., Seattle, unveiled "Mysteries of Fertilizer," while discussing fertilizer cost figures and ways to sell more fertilizer to farmers.

The value of window display space from the standpoint of advertising, publicity and prestige was explained by Bert Harris, president of Bert Harris & Associates, Portland. He emphasized that farm supply store windows are one of the cheapest and most effective advertising mediums available.

"Every retailer who has not yet realized the function of modern window displays should start thinking about it and revise his attitude," Mr. Harris declared. "Make this test: Stand outside your firm's window and count the number of prospective customers in front of it. Then listen to what they have to say. Absorb this lesson and draw your own conclusion."

FARM SALES

(Continued from page 9)

The budget on advertising is liberal enough to cover newspapers, radio and TV. One of the most effective forms, Mr. Wakeman finds, is making a page advertisement and running as many as three separate ads on it. One such advertisement carried ads on paint, garden supplies and weed killers. They were on one page, but each one was separate and distinct from the other two.

In addition to the regular advertising channels, Mr. Wakeman is quite an artist with a brush, and keeps many attractive signs in the windows and inside the large display store

room. The signs are really eye-stoppers, and each one tells of some certain product and gives the price.

Last year Mr. Wakeman decided to get into the application part of farm chemicals, and bought a spraying rig. He drummed up a few jobs for his driver to spray irrigation ditches for noxious grass. In just a few weeks, he was snowed under with orders, and now in season the sprayer is kept busy every hour of the day.

"It's been a nice little money maker," he said. "We charge 10¢ a mile going to and from the field and get \$3 an hour for its use. The aeromatic salts used to kill the grass is charged for at regular retail prices."

The store does a big business in irrigation supplies and small farm hardware. Farmers buy sprayers, dusters, hoes, spades, irrigation boots and gloves and numerous items connected with irrigation farming.

"We have no hesitancy in recom-

mending chemicals to a farmer," Mr. Wakeman said, "because here in the Snake River Valley we have one of the finest potato areas in the nation. Last year farmers grossed several hundred dollars an acre from their potatoes, so they can't afford to lose it to the weevils and bugs. It is the same with fertilizer. If we can convince a man that he can grow 30 bu. more potatoes to the acre on a small expenditure, then it's good business for both of us."

Another thing Mr. Wakeman brought out during the interview is that every store ought to have a certain personality or flavor about it different from all other stores. With the Idaho Falls Farm & Home Store this was brought about by specializing in the horseman's needs. The store has more saddles, more bridles and more horse shoes than any store in eastern Idaho, and maybe in the entire state. On one attractive rack near the front door there are hung over 1,000 horse shoes of all sizes

and types. Nearby is the saddle rack, where a dozen fine saddles are displayed.

"We get customers from 100 miles away," Mr. Wakeman says. "Even the college boys from over at Pocatello come over here for saddle and riding accessories. Ranchers half way across the state drop in to visit when coming through town, and the saddles are always quite an attraction for them."

In summing up the principles of selling farm chemicals and other products, Mr. Wakeman made this statement: "Keep a store clean and attractive; have everything neatly arranged with prices listed on it. Have a well-informed, courteous staff who can make people feel welcome. Advertise liberally to let people know you want their business. And then when they come into the store, have the kind of merchandise that a customer wants. Don't let them buy one item from you and then go somewhere else for the second one. Keep them both in stock and make an all-out effort to sell them."

Books on Pesticides

WEEDS—Second Edition (1955)

W. C. Muenscher

Entire book has been revised and reset, with descriptions of seventy weeds added to the original list of five hundred, plus twelve new full-page plates depicting nineteen kinds. Keys and full descriptions provided for identification with detailed illustrations of 331. Types and sources of weeds, their means of reproduction and dissemination, and the amount of damage they inflict on crops. Specific directions for control, with reference to chemical methods of recent discovery **\$10.00**

CHEMICAL BUSINESS HANDBOOK

Dr. John H. Perry

1,300 double column pages, the equivalent of several average books; 700 illustrations, by 124 contributors. Market research data section is 280 pages, business mathematics 200 pages, financial and accounting 142 pages, research and development 150 pages, sales and advertising 92 pages, twenty sections in all. The book deals with chemical management problems and is useful to technical men, engineers and executives, in the chemical and allied fields. Dr. Perry is editor of the Chemical Engineers Handbook, a companion publication **\$17.00**

INSECT PESTS OF FARM, GARDEN and ORCHARD Fifth Edition (1956)

Leonard M. Peairs and Ralph H. Davidson

A standard text for 44 years. Includes insects affecting grasses, grains, cotton, legumes, vegetables, flowers, fruits, stored products, household goods and domestic animals. Contains a new chapter on insecticide formulations, spray mixtures, application equipment, etc. Material on forty new pest species added, including drastic changes in the illustrations. 661 pages **\$8.50**

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APPLIED ENTOMOLOGY, Fifth Edition

H. T. Fernald and Harold H. Shepard

This text since 1921 has had an outstanding record of usefulness. The Fifth Edition preserves the general organization and coverage, with changes to improve the presentation and to incorporate new knowledge. Contains chapters on anatomy, physiology and development. The economic importance and control of insects are discussed in a general way with much attention to insecticides. The classification of insects is emphasized, with examples drawn from species conspicuous for being very harmful or decidedly beneficial. Specific control measure included for injurious forms. Last chapter considers other pest animals closely related to insects. 385 pages **\$7.00**

THE GARDENER'S BUG BOOK (1956)

Dr. Cynthia Westcott

The Complete Handbook of Garden Pests and their control. Information, scientifically accurate but easy to read on 1,100 insects, mites and other animal pests that attack trees, shrubs, vines, lawns, flowers, fruits and vegetables in home gardens. Illustrations in full color. Control measures combine the latest in chemical developments with time-honored cultural measures. Helpful to all who serve the general public and to truck farmers and fruit gardeners. 579 pages, cloth bound **\$7.50**

THE CHEMISTRY AND ACTION OF INSECTICIDES

Harold H. Shepard, Entomologist, U. S. Department of Agriculture, formerly Associate Professor of Insect Toxicology, Cornell University.

Treats the chemistry of insecticides, the history of their use, their commercial importance here and abroad, the nature of the major uses, the influence of environment on effectiveness. Materials are arranged according to their chemical relationships. Two chapters relating to organic compounds largely new as insecticides. Illustrative data in form of tables, and a convenient appendix of equivalents arranged for practical use in the field. 504 pages **\$8.00**

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Dr. E. R. de Ong

The information is grouped according to field of application rather than to chemical composition or nomenclature. Chapters on insecticide label, seed disinfectants, herbicides, forest insects and diseases, livestock insects, and the pests found in household and industry. Fumigation of warehouses, residual sprays and preservatives for fruits, vegetables and wood products are covered. An up-to-date guide on pest control with the needs of operators, agricultural and structural specialists carefully considered. Shippers and warehouse personnel will find the book useful. **\$10.00**

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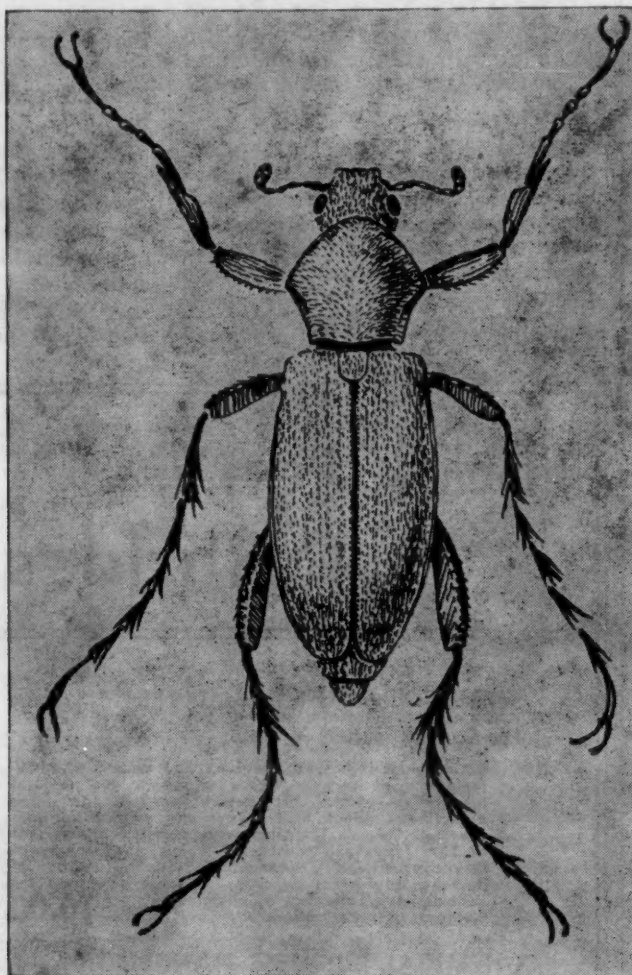
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BUG OF THE WEEK

Mr. Dealer—Cut out this page for your bulletin board

Rose Chafer



How to Identify

The rose chafer is a long-legged, yellowish-brown beetle about $\frac{1}{2}$ to $\frac{2}{3}$ inch long. It has a reddish-brown head, but the underside of its body is darker. The body is well covered with small yellowish hairs. In the larval stage, it closely resembles the common white grub, but is smaller and more slender.

Habits of Rose Chafer

Females of the species deposit eggs in groups of from a half dozen to two dozen in the soil, about six inches deep. In ten days to two weeks, these eggs hatch and the larvae which emerge begin to feed on the roots of plants for the remainder of warm weather. At the first hint of cold weather, they dig deeper down into the soil. The winter is passed in the grub stage. They are usually found in uncultivated land from 10 to 16 inches below the surface. By spring, the larvae are nearly full-grown and they work their way toward the surface. Pupation takes place in May and the bug remains in this stage for approximately three weeks.

Damage Done by Rose Chafer

This insect attacks many plants, trees and shrubs, and as its name indicates, it feeds on rose plants. But it also includes in its diet grape plants, apple, peach, cherry, pear, straw-

berry, hydrangea, peonies, raspberries, corn, beans, beets, small grains and grasses. Destruction of grapes is probably most serious, with the insect attacking newly-set grapes. The bug is most abundant on the grape for the first two or three weeks after bloom, but will also be found in smaller numbers for the following week or more. If eaten by poultry, the bug may prove poisonous to the fowl and kill it. The rose chafer is widely distributed, but thrives best in areas where sandy soil is common. It extends over most of the eastern part of the U.S. and into Canada, and westward in the U.S. as far as Colorado and Texas.

Control of Rose Chafer

Control measures are most effective in May and early June, when the insect is in the pupal stage. When crops are well cultivated, fewer grubs are usually found. Entomologists emphasize the importance of controlling this pest when it first appears, because it is at this time that the bug is most vulnerable. Once well established in an orchard or vineyard, it is much more difficult to gain the necessary control. Experiment stations in the states where rose chafer appears, can give the latest recommendations for its control. Locally, county agricultural agents can give information pertinent to types of pesticidal chemicals best suited for a given area.

Illustration of rose chafer furnished Croplife through courtesy of U.S. Department of Agriculture.

Previous "Bug of the Week" features have been reprinted in attractive 24-page booklet, priced at 25¢ single copies; reduced rates in quantities. Write Croplife Reprint Dept., Box 67, Minneapolis 1, Minn.

AGRONOMY MEETING

(Continued from page 1)

urity, but produced more barren ears at the 3-, 6-, and 9-week periods than did the plants in the lower boron levels.

The authors said that field experiments were also conducted and yields increased as much as 70% while barren stalks were reduced from 25% to less than 8%, with 10 lb. fertilizer borate per acre side dressed in the first cultivation. Yields were also increased in the absence of barren stalks because ears were filled more completely, they said.

"Effects of Sulfur on Growth and Composition of White Clover" was the title of a paper presented by C. E. Bardsley, Jr. and Howard V. Jordan, USDA Agricultural Research Service, Mississippi Agricultural Experiment Station. They reported having collected seven soil types from locations in Mississippi where sulfur-response experiments are in progress, and treating these soils with sulfur-containing and sulfur-free fertilizers. These were then cropped to white clover in the greenhouse.

In the absence of applied sulfur, yields were reduced on three of the soils in the third crop, on all soils in the fifth crop, and the seventh crop was virtually a failure, the report stated.

Sulfur uptake by the clover was described, and it was found that the clover produced without sulfur was lower in both sulfur and organic nitrogen percent than that produced where sulfur was applied with the fertilizer. Ratios of sulfur-nitrogen were wider in these plants.

A further study on the role of sulfur in plant nutrition was provided by a paper prepared by Eugene J. Kamprath, Werner L. Nelson, and J. W. Fritts, North Carolina State College. They reported on studies made on response by cotton and tobacco to applications of sulfur, applied as gypsum, to a Marlboro and Durham soil over a 3-year period. Responses by corn, cotton, and soybeans for a 2-year period were also studied for the Marlboro soil. Considerable amounts of absorbed sulfate were found in the lower horizons of both Marlboro and Durham soils, it was reported.

Sulfur deficiency symptoms appeared during early growth in both the cotton and tobacco on the Durham soil. However, the symptoms later disappeared in the tobacco indicating that the plants utilized some of the absorbed sulfur. In the case of cotton, there was an increase in the amount of dry matter produced and the yield of seed cotton with the application of gypsum. No response was noted in corn, cotton, or soybeans on the Marlboro soil.

On the Durham soil, the sulfur content of the tobacco and cotton was increased with increasing amounts of gypsum. On the Marlboro soil, however, the sulfur content of cotton, corn and soybeans was not appreciably increased with applications of gypsum.

Cotton and soybeans apparently have a much higher sulfur requirement than tobacco or corn, the authors concluded. The sulfur content of the corn plant did not change with maturity, but with the cotton, soybeans, and tobacco, the sulfur content of the plant decreased with maturity.

A morning session on Nov. 14 discussed nitrogen and potassium, in a section on soil fertility. L. L. McDowell and G. E. Smith, University of Missouri, presented a paper on "The Retention and Reactions of Anhydrous Ammonia on Different Soil Types." They pointed out that soil texture had a pronounced effect on ammonia movement and retention. The greatest movement of ammonia occurred in the sand and silt loam

soils; and the least movement in the clay.

The loss of ammonia from the air-dry, acid sandy soil at a 6-inch depth of application was 44 times the loss from the calcareous clay receiving ammonia at comparable moisture and depth. The retentive capacity of a soil for ammonia increases greatly as the texture becomes heavier. The loss from the air-dry, calcareous clay soil was negligible even at the 3-inch depth of application, they said.

The addition of anhydrous ammonia to the soil increased the availability of sodium, potassium, and calcium when measured in the saturation extract 2 months after its injection. This fact is supported also by the increased uptake of these elements by oats grown in the presence of ammonia.

The presence of high concentrations of ammonia in a localized area resulted in the partial breakdown of the soil organic matter.

A joint meeting on Nov. 14, with A. H. Bowers, Swift & Co. presiding, took the form of a panel discussion on the subject of "Closing the Gap Between Recommended Fertilizer Practices and Actual Use." Appearing on this portion of the program were G. D. Scarseth, American Farm Research Assn., discussion leader; E. A. Wilkening, Univ. of Wisconsin; G. H. Enfield, USDA extension service; O. E. Anderson, Ohio Bankers Assn.; and Jim Roe, E. H. Brown Advertising Agency, Chicago.

Dr. Scarseth presented an analysis of why a gap exists between recommended fertilizer practices and actual use. He quoted figures to the effect that half of U.S. farm production comes from 9% of the nation's farmers, and that 61% of the farmers in the lowest farm income brackets produce only 12%. "This leaves a middle group of 30% who produce only 37% of the U.S. farm production," he observed.

These three management levels present the range between large operations with a fair amount of working capital and good management, down to the bottom producers who are not conducting economic enterprises, and generally are neither able nor interested in recommendations of any kind. The former group comprises farmers who want to know the "why" of fertilizers. "They want to know the agronomic limits and facts about soils and plant food nutrients and will figure out their own uses and economic risks and advantages. These farmers aren't much interested in fertilizer recommendations because they are beyond this in their own practices."

This leaves a middle group of about 30% to whom the recommendations are directed for the most part, Dr. Scarseth pointed out. He pointed out that this middle group forms the core of rural America, but they are in economic difficulties most of the time, even including prosperous times. Among the reasons listed by Dr. Scarseth for this situation, is the homesteading act that set the farm size at 160 acres, he said. "This is too small for the high overhead of modern times to be efficient. Therefore, these farmers are short of working capital and long-time credit such as goes with spending money for fertilizers which pay up to 300% return over a period of years."

"This return does not always come in time for the bank loan due on the fertilizer purchase and may be disastrously postponed by storms, drought, or pests. The result is that even the fertilizer recommendations which are a big improvement over used practices, go unheeded."

The agronomist went on to say that the vast research now forming a foundation for better recommen-

dations is proving that there are many farmers who are fast closing the old gap between recommendations and practices. He included in these influences, the "100-Bushel Corn Prescription" and "Sure-Fire Alfalfa Prescription," which have been used successfully in Wisconsin. The "X-Tra Yield" programs used in Minnesota, Illinois, and Iowa have been most effective in stimulating farmers, especially club boys, to try for higher efficiency in the use of fertilizers, he said.

Some of the factors affecting diffusion of recommended fertilizers were enumerated by E. A. Wilkening, University of Wisconsin, as part of the panel discussion. He told the ASA audience that the adoption of recommended practices is viewed as a process which occurs over a period of time. During this process the farmer becomes aware of the new practice, becomes interested in it, weighs its advantages and disadvantages, tries it out, and, finally, adopts it completely. The mass media are effective in the awareness and interest stages; neighbors and friends are most important in the decision-making stage; agricultural agencies and commercial dealers are important in the trial stage. Also, there are variations in the sources of information for different types of practices.

The process of adoption of new practices is influenced by many social as well as economic factors. Community standards and social relationships influence the degree of interest in new practices and the extent of communication of information about them. The nature of leadership and control in a community influences the rate of acceptance of new ideas and practices.

Characteristics of individual farmers and their families are related to their adoption of recommended practices. Those who adopt practices early are more likely to be younger, have more formal schooling, have larger farms, be active in farm organizations and participate in educational programs. They are also more likely to place high value upon individual achievement, modern living, and upon the business aspect of farming.

The first to adopt recommended practices are more likely to depend upon the agricultural agencies and other formalized sources for their information. Those who follow are more likely to seek information from the early adopters and from other farmers. The rate of adoption of a practice in a community or area is influenced by the effectiveness with which the early adopters communicate information about the practice to their neighbors.

O. E. Anderson, representing the Ohio Bankers Assn., told the group that fertilizer prices and interest rates paid by farmers on their debts are the two cost items which have increased least over the past 20 years. Using the 1910-14 period as 100, he said, fertilizer costs have risen a total of 51 points since 1935, while interest rates on debts have gone up only 21 points. All farm costs, including taxes, wages, etc., have gone up a total of 167 points during that same period.

"Serious consideration should be given to the use of expanded farm credit for the purchase of additional plant food supplies as a direct and very effective means of overcoming many of the other farm cost increases," the banker said. "Farmers, of course, continue to find it necessary to purchase feed, seed, farm machinery, motor supplies and vehicles, building and fencing material, pay hired labor, meet their tax bills, buy food, clothing, and building materials for their homes, and meet other obligations for household operations such as medical and dental bills. All these things are direct competitors

to fertilizer for a share of the farm family dollar.

"Changes of emphasis in this pattern during the future may occur in such categories as purchases of additional farm lands, increased use of farm machinery as wage rates continue to mount, plus a continued upward trend in the cost of buildings and their maintenance.

"In general, total farm credit does not appear to be out of line, and it can be assumed that adequate credit should be available to farmers during the coming months. More study needs to be given to the broader use of agricultural credit for better farming operation, including greater use of plant foods in the future," he concluded.

Jim Roe, Chicago advertising executive, explained the use of mass advertising media to close the gap between agricultural research and farm practice. "The best way," he told the audience, "is to go out to the farm and show each farmer just exactly how to use a new method and exactly what good it will do him."

He emphasized the need for simplicity in accomplishing this end, and recommended the use of a four-point formula: 1. Know the problems of your readers or viewers; 2. Find answers to those problems; 3. Present the answers in a way which assures understanding and prompts action; 4. Present new problems—for of such stuff is progress composed.

Mr. Roe urged his listeners that in using this formula, they must always keep in mind the single objective to "make someone do something as a result of having read, heard, or seen your message."

George H. Enfield underlined the practicality of the farm demonstration to solve problems. This is still the most effective means of getting a recommended practice adopted, he said.

To speed the adoption, the demonstration should involve many people either working out a single demonstration, or preferably many demonstrations that lead to the same solution. The results of the demonstration should be translated into tangible terms. These terms should be visualized not only for the present, but for the future, and expanded to show what adoption of the demonstrated practices could mean to the farm, neighborhood, or community. A multiple-purpose approach can be an accelerator to show how the adoption of the practice will lead to a more sought-for way of life.

Crop production contests have been an effective means of emphasizing recommended practices, it was pointed out. Services such as soil and plant tissue-testing and soil classification have provided means for diagnosing situations and more accurately predicting the expected responses of various treatments. This improved accuracy has increased confidence, he declared.

Improved dealer and educator relationship has also developed a more unified approach, he went on. Simplification of recommended practices has speeded adoption. Industry has been an important contributor. Custom services at reasonable prices have also been very effective, it was concluded.

PERSONNEL SHIFT

ST. LOUIS, MO.—Joseph P. Berndt, Jr., St. Louis, has become assistant manager of the project engineering section in the engineering department of Monsanto Chemical Company's inorganic chemicals division. He succeeds Fred T. Mitchell, who has joined the division's production department to work on problems in connection with acquisition and movement of raw materials.



Bruce D. Knoblock



Jack Schack

Diamond Opens Mexican Pesticide Plant

CLEVELAND, OHIO — Diamond Alkali Co. has announced the formation of a new company, located in Mexico, to produce liquid and dust insecticides. Name of the new firm is Insecticidas y Fertilizantes Diamond del Norte S.A., at H. Matamoros.

Diamond has also opened a new sales office in Mexico City, and in this connection, has announced the promotion of two persons in its executive organization. Bruce D. Knoblock, formerly associated with General Motors de Mexico, S.A., has been named general manager, and Jack Schack, previously manager of the chemical department of Bunge-Mexico, S.A., and for the past two years with Diamond in a sales capacity, has been made sales manager.

The latter new firm, Diamond Black Leaf de Mexico S.A. de C.V., known in Mexican commercial circles as "Diablamex", operates a completely integrated insecticide manufacturing plant in the Xalostoc industrial zone of Mexico City. Situated on 15,000 square meters of land, the plant has more than 75 Mexican employees.

It is equipped to produce ground sulfur in substantial tonnage, according to information from Diamond Alkali. Crude sulfur, produced by Mexican companies in the Tehuantepec Peninsula, is transported in

bulk to the plant where the material is ground and further conditioned for shipment to agricultural areas. The facilities are equipped also to manufacture insecticide concentrates and finished insecticides in both liquid and dust forms.

General management of Insecticidas y Fertilizantes Diamond del Norte S.A., is headed by Ing. Luis Briones Moreno, previously general manager of Insecticidas y Fertilizantes S.A., whose assets and business were acquired by the new company.

Diamond points out that agricultural chemical production in Mexico received its major impetus only last summer. At that time, a group of Mexican businessmen, headed by Messrs. Javier Robinson Bours and Francisco Schwarzbeck of Cuidad Obregon, established Insecticidas del Pacifico S.A. de C. V. and built an insecticide-formulating plant in Cd. Obregon, Sonora.

Designed and built with the technical assistance of Diamond Alkali, the Mexican-managed-and-operated facility is presently blending dust for cotton and other crops on the Pacific Coast of Mexico. After only one year's operation, the plant's production capacity has been expanded and additional equipment installed for making a wider range of products, including liquid insecticides and concentrates.

First Frost of Year Hits Mid-South Crops

MEMPHIS—Temporary and minor damage was done to winter grazing crops in the Mid-South last week by the first frost and freeze of the season.

Extension officials of Arkansas, Mississippi and Tennessee said the crops are expected to recover, however. Fall vegetables were killed, except for a few hard winter vegetables.

The frost was helpful toward opening of late cotton and will enable farmers to get the remaining part of the crop out of the fields. The crop is about 95% harvested in Mississippi, 85% in Arkansas, 85 to 90% in Tennessee.

Rice and soybean crops are about completed and farmers are ahead of schedule on much of their farm work, although they were slowed some last week by rains.

Arkansas cotton and rice farmers have made steady progress toward harvesting this year's yields, the Agricultural Extension Service reported. The service said cotton was about 85% picked on a statewide basis, with an even better figure, 94% reported for rice.

Cotton farmers were reported slightly ahead of last year on yields.

Kenneth Bates of the extension service said recent rains have "greened up" many pastures but frost probably was going to cut them short and do livestock farmers little good. The rains helped replenish stock ponds to some extent, but the state still could stand about 4 in. of rain to bring the ponds up to normal, he said.

Farmers continued sowing small grains the last two weeks, but were taking a chance on getting them up and growing because of the prospect for cold weather.

Growth of winter grazing crops was temporarily halted by heavy frosts and below-freezing temperatures throughout most of North Mississippi last week, the extension service reported.

While growth was halted, damage was believed to be only slight as in most cases cereals and winter grasses had not reached susceptible stages of growth.

Sweet potatoes still in the ground were believed to be undamaged, Chelsey Hines, extension horticulturist, reported. He urged farmers to dig them as soon as possible.

Pecan harvesting will pick up, following frosts, he added. Planting of winter grazing crops continued despite cold weather.

Cotton Production Group to Discuss Weevil Resistance

MEMPHIS, TENN.—The best information on ways of getting the cost of growing cotton down and its quality up, will be pooled at the second annual Cotton Production Conference in Birmingham, Ala., Dec. 13-14.

Lower costs and improved quality for cotton not only will make more money for the grower but also will help him to meet competition from other fibers that are also seeking a place in the market, the National Cotton Council states.

Sponsored by the Council in cooperation with research and educational workers in Cotton Belt land grant colleges, USDA, the agricultural chemical industry, and other organizations, the conference is expected to draw between 800 and 900 persons.

"The program will take a good look at what's come out of test tubes and laboratories of private and public research groups working on various phases of cotton production," the Council says. Topics include research on soil-water-plant relationships, cotton breeding, disease control, weed control, defoliation and insect control.

One topic that is expected to create wide interest, is whether or not the boll weevil and other cotton insects are building up resistance to recommended insecticides. The subject will be discussed by a leading entomologist.

Among other topics are progress and problems in pink bollworm research, putting dollars and cents measurements into research experiments, and an extension service program for cotton.

The production conference will be

preceded by open meetings of technical groups on cotton defoliation and disease control Dec. 12, and cotton improvement Dec. 11-12. A fourth meeting on insect control will be attended primarily Dec. 10-12 by research and extension entomologists of Cotton Belt land grant colleges and USDA.

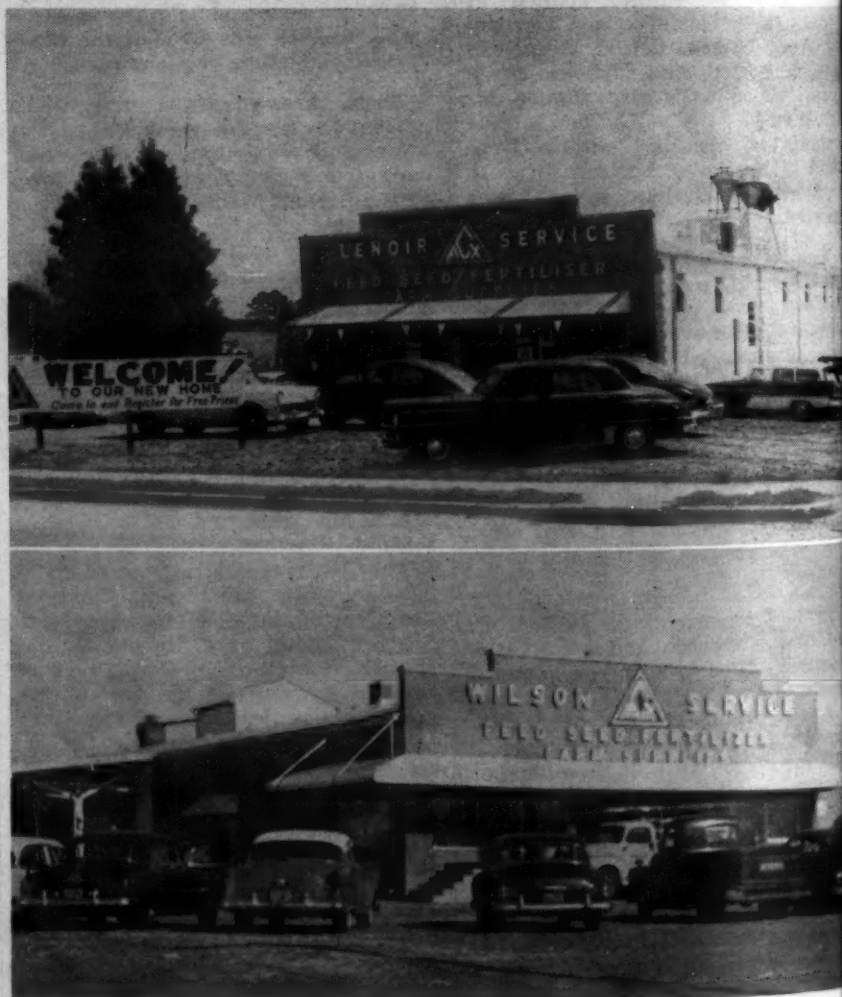
USDA Revises Beetle Quarantine Areas

WASHINGTON, D.C. — Fourteen sections in Iberia Parish, La., were removed from the white-fringed beetle regulated areas in administrative instructions, effective Nov. 8, the U.S. Department of Agriculture has announced. The instructions also add to the regulated areas for the first time part of Dale County, Alabama; and parts of Copiah, Lincoln, Pike, Scott, and Walthall counties, Mississippi; and increase the size of the regulated areas in Geneva, Houston, and Mobile counties, Alabama; Jackson County, Florida; Hinds, Leake and Marion counties, Mississippi; and Shelby and Tipton counties, Tennessee.

A revision of separate administrative instructions exempting certain articles from the white-fringed beetle certification requirements, also effective Nov. 8, provides less stringent conditions for the exemption of forest products, brick, tile, stone, concrete slabs, pipe, building blocks, and cinders.

A revision of the white-fringed beetle quarantine and supplementary regulations is also concurrently effective to authorize the designation by the chief of the plant pest control branch of regulated areas within already quarantined states.

(In a regulated area, the U.S. Department of Agriculture and cooperating States supervise the movement of plants and other articles that might spread the white-fringed beetle to uninfested areas. The entire



NEW RETAIL OUTLETS—Farmers Cooperative Exchange, operating in both North and South Carolina, has recently completed new retail store buildings on the outskirts of Kinston and Wilson, N.C. The upper photo shows one recently-opened unit, located on U.S. highway 258, at the edge of Kinston. The lower picture gives a view of the Wilson store, located on heavily-traveled U.S. highway 301, in an area of tobacco warehouses. It has a parking lot which can accommodate up to 100 cars or trucks.

Both stores formerly occupied locations in the main business areas of their cities, but traffic congestion and parking problems presented severe handicaps and tended to cut down trade. Since moving to the more accessible locations, both stores have reported significant increases in business, the co-op reports.

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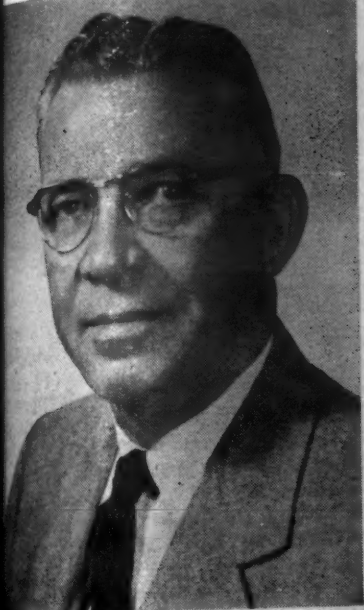
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Cliff W. Collier

JOINS SOUTHERN NITROGEN — Cliff W. Collier has been named sales representative in the South Georgia territory for Southern Nitrogen Co., Inc., the firm has announced. A native of Georgia and a graduate of the University of Georgia School of Agriculture, he has had broad experience in the fertilizer trade in the area. In 1929 he joined the N. V. Potash Co. in the promotion and sales of potash material in Georgia. Later, after six years in the U.S. Air Corps, he was on the sales force of Synthetic Nitrogen Products Corp. and more recently was associated with the Potash Import and Chemical Corp. He will make his residence in Albany, Ga.

ates of Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee are quarantined because of the white-fringed beetle, but only those portions actually infested are designated as regulated areas. The beetle, which does not fly, does the most damage as a grub in the soil, attacking the roots of cotton, tobacco, peanuts, corn, sugarcane, sweetpotatoes, clover, and other field crops.)

Regulated areas in the eight quarantined states, including those added in the Nov. 8 order, now include all or portions of the following counties and parishes:

Alabama: Baldwin, Clarke, Coffee, Conecuh, Covington, Crenshaw, Dale, Dallas, Escambia, Geneva, Houston, Jefferson, Lowndes, Marengo, Mobile, Monroe, Montgomery, and Wilcox counties.

Florida: Escambia, Holmes, Jackson, Okaloosa, Santa Rosa, and Walton counties.

Georgia: Baldwin, Ben Hill, Berrien, Bibb, Bleckley, Bulloch, Burke, Candler, Coffee, Crawford, Crisp, Dodge, Emanuel, Fulton, Greene, Houston, Irwin, Jasper, Jefferson, Johnson, Laurens, Macon, Monroe, Montgomery, Newton, Peach, Putnam, Richmond, Screven, Sumter, Taylor, Toombs, Treutlen, Turner, Twiggs, Washington, Wheeler, and Wilkinson counties.

Louisiana: East Baton Rouge, Jefferson, Orleans, Plaquemines, Saint Bernard, Saint Tammany, Tangipahoa, and Washington parishes.

Mississippi: Attala, Clarke, Copiah, Covington, Forrest, George, Greene, Hancock, Harrison, Hinds, Jackson, Jasper, Jefferson Davis, Jones, Lamar, Lauderdale, Lawrence, Leake, Lincoln, Marion, Pearl River, Perry, Pike, Rankin, Scott, Simpson, Stone, Walthall, Warren, and Wayne counties.

North Carolina: Anson, Brunswick, Cumberland, Duplin, Edgecombe, Harnett, Jones, Nash, New Hanover, Onslow, Pender, Union, Wake, and Wayne counties.

South Carolina: Beaufort and Fairfield counties.

Tennessee: Hamilton, Hardeman, Shelby, and Tipton counties.

CCC to Add Carrying Charges on Cotton Export

WASHINGTON, D.C. — The U.S. Department of Agriculture has announced that beginning with the first offers received in November under the cotton export program, the Commodity Credit Corp. will add carrying charges in determining acceptable sales prices.

These carrying charges will be in accordance with the schedule in use for determining minimum sales prices under Section 407 of the Agricultural Act of 1949. This schedule, as announced on July 27, 1955, provides for the addition of 25 points for the month of November. No other material changes in the export program will be made at this time.

The announcement is being made to aid purchasers in their future bidding and also inform interested parties that sales of cotton from the 1954 and prior crops now in CCC inventory will continue to be made under the current export program substantially as in the past.



FERTILIZER PLANT MODERNIZES—Swift & Co.'s plant food factory at Columbia, S.C., which has spent \$100,000 in the past year to improve its facilities, is continuing a modernization program which includes construction of new sides to its building which will be used in manufacturing and storage of various plant food materials. Workmen are shown in the picture in the process of putting new asbestos siding over a framework of steel. The end result will be, according to the company, a durable structure made to last many years. One of the unusual features of the construction is the inclusion of two rows of translucent fiberglass paneling which admit light.

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Use

DAVISON'S TRIPLE

Superphosphate

State Agricultural Experiment Stations and other authoritative sources are recommending fertilizers with ever increasing plant food units per ton. High analysis fertilizers are in demand because they give more for each fertilizer dollar. Meet this demand by incorporating Davison's New Triple Superphosphate in your formulation.

Davison's Triple Superphosphate has 45/46% available P_2O_5 and is supplied in the easy-to-use granulated form or run-of-pile.

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DAVISON CHEMICAL COMPANY

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PACIFIC PLANT FOOD ASSN.

(Continued from page 1)

surplus problems of wheat, starting with 1929 when the stockpiles started building up. At that time, the government started an export program, and since then, very little wheat has been exported without government subsidy, he said.

The speaker also reviewed the ups and downs in the wheat surplus—a reduction caused by the drouth of the early 1930's; more surplus beginning about 1937; World War II which again trimmed the surplus stocks; the years since which have increased them.

He reminded the audience that there is a national minimum wheat allotment of 55 million acres, and he said that part of the soil bank is just a gimmick to sneak under that allotment.

Dr. Jackman reviewed the two principal parts of the soil bank, that part designed to reduce crop acreage next year and the conservation part of the program, designed to take land from crop production and build up its fertility over five and ten year periods.

Growing grass on soils does not increase soil fertility one bit, Dr. Jackman said. For that reason, unless farmers use either nitrogen or grow legumes on that land placed in the conservation reserve, the U.S. is wasting its tax money in this program to build soil fertility, he said.

Dr. Russell Coleman, executive vice president, National Plant Food Institute, talked about how the soil bank might affect the fertilizer industry. He said that some changes in the method of administration of the soil bank may be coming up.

Because much marginal land is being placed into the soil bank, the program may not be really effective in cutting down surpluses, Dr. Coleman said.

One of the big deficiencies in the soil bank, he said, is that there is no provision for covering land being placed in the bank. If this land is not covered, we could lose more than we would gain in soil fertility, he said.

Dr. Coleman urged industry to work with state and local ASC committees to stress the importance of covering this land.

Many of the acres being taken out of production by the soil bank offer a good potential for fertilizer use, Dr. Coleman said. How the soil bank will affect the fertilizer industry, in the final analysis, will depend on how good a job the industry does in exploiting the opportunity for fertilizer use on these withdrawn acres, he said.

Dr. Coleman said that he feels that at times we are "becoming slaves of the surpluses." Present surpluses, he declared, are really only reasonable insurance against such things as drouth, famine and war.

He told the audience that one likely result of the soil bank would be to push farmers faster toward efficient production.

He showed the group the Plant Food Institute's new film, "What's in the Bag?"

Donald Neth, managing editor of Croplife, Minneapolis, spoke Nov. 9 on the topic, "Croplife Views the Fertilizer Industry."

Any view that Croplife takes of agriculture and of the plant food industry will have to be set against the background of mechanical and sociological changes on the farm, he said. He likened the farm revolution of the past several decades to the industrial revolution, with the gasoline engine, hybrid seeds, modern machines and chemicals as the farm counterparts to the development of the steam engine.

All of this change is leading to-

ward the day when farmers will have to farm efficiently, and an era is ahead when farmers will use every tool of production to do so, Mr. Neth said.

He cited some research work done by Croplife which seemed to indicate that many farmers are not now generally using plant food as a real tool of production. Too few farmers, he said, are using fertilizer every year under all price conditions.

Against this background of farm change, Mr. Neth commented on the industry's potential market, assuming that all farmers were to use fertilizer right up to the point where the investment on their fertilizer dollar would no longer give them a reasonable return.

While he did not have this potential tallied up for the U.S. as a whole, he cited figures provided by state experiment stations, which indicated that farmers in many states could profitably increase fertilizer usage by from two to ten times.

In citing these estimates of optimum fertilizer use, Mr. Neth told the audience to bear in mind that these were state experiment station people talking and that their emphasis was on what was good and profitable for the farmer.

"We foresee the day when farming with experiment station recommendations will be standard operating procedures for the farmers," Mr. Neth said. "We think it is just as certain as the death of the spinning wheel."

He gave a salute to the work being done on profitable fertilizer use by the National Plant Food Institute and state bankers associations, and said that the farm demonstration projects of the Pacific Northwest Plant Food Assn. also were of extreme value.

Through these projects, Mr. Neth said, the association "is showing the cooperating farmers, and others who will look and listen, not only how to increase yields and grow greener grass, but also how to farm more efficiently for more money in the pocket. You are giving them fertilizers as a tool of production, and you are showing them how to use them."

The three directors of agriculture of the Pacific Northwest states explained the functions of their departments at the Nov. 9 session.

Sverre Omdahl, director of the Washington Department of Agriculture, reminded the group not to blame the officials for the law. "We don't write the law, but we must enforce it," he said. "Once you have a statute, that statute belongs to you as well as to the farmers and buyers."

He said that the fertilizer functions of his department were simple: they are to see that labeling is complied with to make certain that when the farmer buys he is getting what the label says and what the salesman says.

"The trade will have to police itself and build faith and trust in itself," Mr. Omdahl said. "Industry has as much responsibility for policing these things as does the government."

James Short, director of the Oregon Department of Agriculture, outlined the work of his agency. He said that it administers some 60 laws and that its activities cover the areas of inspection, regulation and police action.

Harold West, director of the Idaho Department of Agriculture, pointed to the cooperation that exists between the agriculture departments of Washington, Oregon and Idaho.

He said that the farmers, because of the present cost-price squeeze, are getting more critical of the events

MEETING COVERAGE

The Pacific plant food group meeting at Harrison Hot Springs was attended by Donald Neth, Croplife's managing editor. Mr. Neth not only covered the event for the publication, but participated in the program as well.

that affect them. Farmers in their own farm organizations are beginning to break up into commodity groups, he said, in an effort to find out what they can do for themselves.

In a secretary's report read at the final session, the accomplishments of a busy association year were listed. The principal areas of work were a series of dealer days, a pasture program, the regional fertilizer conference which drew a registration of 257 at Yakima, scholarship program, the farm demonstra-

CALIFORNIA CONFERENCE

(Continued from page 1)

uct for any past year he then could compute fertilizer consumption for that year. An accurate estimate of gross national product for any year ahead would permit a close estimate of fertilizer consumption in that year.

Dr. Neff said that the gross national product is running about \$410 billion during the last quarter of this year, and that the most important items in it for this forecasting purpose are consumer spending, investment spending and government spending. He listed factors in each of these areas which would help make reasonable forecasts.

"Businessmen can make as good forecasts as can anyone else, if they will take the trouble to organize the data," Dr. Neff said.

On the basis of the system he has devised, Dr. Neff forecast that fertilizer consumption will be 23½ million tons in 1957, 32½ million in 1965 and 40 or 41 million tons in 1975.

The speaker said that each company could go farther than that and, by relating its own sales to the total, could get a picture of its own market ahead.

Delegates also heard a rousing talk on how to "Sell the Sizzle in the Fertilizer Industry," by Elmer Wheeler, sales manager expert, Dallas.

"It's the sizzle that makes people buy," he said. "Selling is a trick; but it isn't trickery. The trouble with trickery is that you can only use it once. The day of the high pressure selling is gone and the day of low pressure, sincere, scientific selling is here."

Mr. Wheeler listed these aspects of his selling philosophy:

Don't sell the steak, sell the sizzle. The sizzle is the thing that appeals to people's hearts, and hid in every piece of merchandise and every service is a sizzle.

Don't write, telegraph. The first 10 words spoken to a prospect are more important than the next 50,000. Learn verbal shorthand.

Say it with flowers. What a salesman does in front of a customer is as important as what he says. Looks, gestures and showmanship are important.

Don't ask if, ask which. Always give the customer a choice between something and something, not between something and nothing.

Watch your bark. Make your voice interesting. Talk high and low, slow and fast.

Don't think so much of what you want to say; think of what your customer wants to hear.

A panel session the afternoon of Nov. 12 discussed aspects of fertilizer

tion projects and work on cost analysis.

Todt Tremblay, Washington Cooperative Farmers Assn., Seattle, who presided at the session, narrated slide presentation on deficiency symptoms in plants.

Grant Braun, American Potash Institute, Portland, Ore., announced that next year's summer meeting will be held June 26-28 at the Benson Hotel, Portland, and the program will have lime use as its theme.

Arthur Laing, Vancouver, former member of the Canadian parliament, was the principal speaker at the banquet held the evening of Nov. 9. George Crabtree, Buckerfield's, Ltd., Vancouver, was toastmaster. Consolidated Mining & Smelting Co. of Canada was host at a cocktail party preceding the banquet.

Harrisons & Crosfield (Canada) Ltd., and their principals, Sherritt Gordon Mines, Ltd. and Northwest Nitro-Chemicals, Ltd., were hosts at a cocktail party the evening of Nov. 8.

economics. Dr. J. E. Knott, University of California, Davis, was moderator, and panel members were George Monkhouse, Shell Chemical Corp., San Francisco; Ned Lewis Wilbur-Ellis Co., Los Angeles; J. Earl Coke, Bank of America, San Francisco, and Dr. Neff.

Mr. Monkhouse, who said his observations were confined in the main to nitrogen, recalled that in 1951 the principal interest of a majority of California Fertilizer Assn. members was in solids sold in bags. Use of nitrogen has increased in California from 137,000 tons in 1951 to an estimated 210,000 tons in 1956, with most of the jump coming in liquid nitrogen, he said.

Mr. Monkhouse said that while the average price of nitrogen to California farmers had decreased approximately 10% in the last five years, production and selling expense of the industry has gone up. This, he said, is creating a squeeze, which, without sound and realistic business practices, could force some out of business. Mr. Monkhouse listed the ingredients in his pre-

CFA NAMES OFFICERS

CORONADO, CAL.—Jack Baker, Bandini Fertilizer Co., Los Angeles, was elected president of the California Fertilizer Assn. at the 33rd annual convention of the group held here Nov. 11-13. He succeeds William E. Snyder, Wilbur-Ellis Co., Los Angeles.

Other new officers are William G. Hewitt, Pacific Guano Co., Berkeley, vice president; Howard H. Hawkins, Golden State Plant Food Co., Glendora, treasurer, and M. M. Stockman, the Mountain Copper Co., Ltd., San Francisco, secretary.

Sidney H. Bierly, executive secretary and manager, received the new title of general manager in the new constitution and by-laws adopted by the association.

Elected to the board of directors were Mr. Baker; John C. Anderson, Agriform Co., Inc., Bakersfield; John N. Williams, General Fertilizer & Supply, Chula Vista; Arthur W. Mohr, California Spray-Chemical Corp., Richmond; Lowell W. Berry, the Best Fertilizers Co., Oakland; Virgil Frizzell, the Triangle Co., Salinas, and Earl R. Mog, Growers Fertilizer Co., Stockton.

Holdover members of the board are Mr. Hawkins, Mr. Snyder, Mr. Hewitt, Mr. Stockman and Fred R. Bryant, Brown & Bryant, Shafter. Retiring board member is B. H. Jones, Sunland Industries, Inc., Fresno.

GRAIN SANITATION

(Continued from page 5)

smaller operators who are engaged in mixed farming do not have proper wheat storage facilities nor do they handle the grain and fumigate it the way they should. Mr. Pence said the two things most needed in the clean grain program now are better farm rodent control and higher prices at the country elevator for clean grain than for contaminated product, instead of the same price for all that now prevails. "When you touch the pocket-book nerve things begin to happen," Mr. Pence declared.

There is no such thing as internal damage to wheat kernels in the field, D. A. Wilbur, professor of Entomology, Kansas State College, told the conference. The life cycle of the granary weevil is such that it would not be possible for this type of insect to develop in the brief period between the formation of the kernel of wheat and the time of harvest.

Dr. Wilbur said that some inspections have shown a small amount of preharvest wheat kernel damage which resembles weevil damage, but which apparently is caused by grasshoppers, army worms, cut worms and similar field insects. He said that it is possible that in cases of heavy infestation of such predators, it might be worth while to spray wheat fields with a pesticide, but implied that such circumstances would not occur very often.

Substantial progress has been made in controlling the khapra beetle, D. R. Shepherd, Agricultural Research Service, U.S. Department of Agriculture, said. "By the end of the year," Mr. Shepherd added, "we will have completed the treatment of practically all known infestations. We believe that timely application of regulations has precluded the spread of this pest to other parts of the country. It is significant and gratifying that up to this time the khapra beetle has not been found in any of the very large storages of the country.

"Even though there is reason for optimism, no one connected with the program is overlooking the vagaries of the problem. We know that light infestations are difficult to find and there is a great opportunity for spread through the movement of host materials. Much survey work will have to be done before we can be sure that the pest has not spread to other parts of the country. There must be continued vigilance at port of entry to prevent new introductions of foreign sources."

Mr. Shepherd said more than 45,000 storage points have been inspected one or more times for a total of 60,000 inspections in 35 states. A total of 446 sites was found infested. These have been or will be fumigated in all cases. So far there have been only two cases where fumigation has been ineffective and only

one case of re-infestation has occurred.

Dr. R. T. Cotton, entomologist, stored products insect section, U.S. Department of Agriculture, discussed the various liquid grain fumigants that can be used at the farm storage level. He pointed out that certain specific materials have been cleared for use by the establishment of tolerances for residual amounts or by exemption from tolerances. He said that the development of dust and spray protectants was one of the major advances in the control of stored grain insects in recent years, and that the products are well adapted to treatment of grain stored at the country level.

H. H. Walkden, entomologist in charge, stored products insect laboratory, U.S. Department of Agriculture, gave a comprehensive review of the various methods that have been suggested and developed over the past few years for the detection of hidden infestation in wheat. None of these methods meets all of the requirements, particularly for a quick accurate test at the country elevator level, he said. X-ray techniques are the most satisfactory, but also the most expensive, he pointed out. He mentioned that the British are using a measurement of carbon dioxide as an index of infestation in grain.

W. W. Dykstra, fish and wildlife section, U.S. Department of Interior, described some of the newer methods for control of rodents. He stressed particularly the value of establishing outside bait stations to intercept rodents before they get into the plant, and described the various types of bait in use. He said a re-examination would be started of the "tracking" type poisons, which have become quite popular in Europe, but pointed out that these would not be suitable for use in a food plant situation. From Mr. Dykstra's talk and comments from the floor, it was evident that birds are a major headache for the food plant sanitarian and elevator operator, and that no certain solutions were offered, and it was evident that opposition from humane societies was a great handicap to meeting the bird problem in many areas.

Methods used to promote grain sanitation in the Pacific Northwest were described by David Walker, assistant entomologist, Washington State College, and Douglas Barnes, of the Rockefeller Foundation, gave a report of his work on stored grain insect problems in Mexico. V. K. Rowe, biochemical research department, Dow Chemical Co., gave a complete resume of toxicity levels of major grain fumigants and the symptoms of over exposure. He also gave reports of study made of the levels of several fumigant materials in "the breathing zone" operators spraying farm bins and similar storage installations. In nearly every instance, there is an exposure of the operator to a level in excess of that considered safe. Respiratory protection is an essential, the speaker said.

ILLINOIS GROUP ELECTS

CARBONDALE, ILL.—John A. Nemanich, Manhattan, Ill., was reelected president of the Illinois State Vegetable Growers Assn. at its recent meeting at Southern Illinois University. Harold Fingerhut, E. St. Louis, was named vice president and Charles Benck, Manhattan, secretary-treasurer.

NEBRASKA FERTILIZER MEET

LINCOLN, NEB.—The Nebraska Fertilizer Institute will hold its annual meeting at the college of agriculture, University of Nebraska, Jan. 15-16, according to an announcement by Howard W. Elm, executive secretary.

istrative and Soil Improvement Committee budgets, which were adopted.

The Man-of-the-Year award was passed by this year. At the Nov. 12 luncheon Mr. Snyder read a letter from the selection committee stating that, in the opinion of the committee, no one man this year was a clear-cut choice.

Also at the luncheon Mr. McCollam presented to Dr. Warren Schoonover, University of California, Berkeley, a plaque expressing the association's appreciation for his service to agriculture and industry.

Haig Arakalian, San Diego Fertilizer Co., San Diego, sang at the luncheon.

Stauffer Chemical Co. and Western Phosphates, Inc., were hosts to cocktails and a buffet dinner the evening of Nov. 11. Balfour, Guthrie & Co., Ltd., sponsored a cocktail hour the evening of Nov. 12. This was followed by a steak dinner, courtesy of Shell Chemical Corp. American Potash & Chemical Corp. was host to a cocktail party preceding the banquet Nov. 13.

Gloomicides

In spite of the growing popularity of canned and frozen fruit juices, most guys still like to squeeze their own tomatoes.

★

The lawyer was browbeating the witness. "I understand," he said fiercely, "that you called on the defendant. Is that so?"

"Yes," replied the witness.

"What did he say?" continued the lawyer.

At this point the counsel for the opposition objected that evidence as to conversation was not admissible. An hour's argument ensued. Then the court retired to consider the point, returning after considerable time to announce the question a proper one.

"What did he say?" repeated the lawyer, with a confident smile.

"He wasn't home, sir."

★

Conference: The confusion of the loudest talking guy multiplied by the number present.

★

Nothing makes a man forget a passing fancy like something fancier.

★

These days, "a small service charge" is likely to refer to the service, not the charge.

★

Note from teacher on Jane's report card:

"Good worker, but talks too much."

Note from father under signature:

"Come up sometime and meet her mother."

★

A husband's better judgment is what tells him not to insist on it.

MAN VS. INSECT CONTEST CONTINUES

ST. PETERSBURG, FLA.—Are insects keeping pace with man in the battle for survival? According to a number of scientists attending a recent regional work conference on nuclear energy here, the bugs are maintaining their position in the race, despite the inroads of pesticides and other efforts on the part of human beings to do them in.

The scientists declared that the insect population is now at its peak and that the total weight of insects now in the world equals the weight of man.

Dr. Frank Soday, Decatur, Ala., for instance, reminded that insects in many instances adjust themselves to local conditions and develop immunity to poisons, so that man must continually seek new methods to control them.

A University of Alabama professor reported that in his opinion insects are far more numerous today than they were when he was a lad, and cited instances where the boll weevil was attacking corn as well as cotton.

A University of Virginia biologist, Dr. Ralph Singleton, pointed out that such modern means of transportation as autos and planes have spread insects far and wide, giving them a chance to establish new beachheads.

Success in solving pest control problems will depend largely on a vigorous program of research, say the scientists, who warn that man must wage a continuing fight if he is to keep ahead of the insect.

scription for success, which was to reach realistic markets with sound, efficient sales and service.

Mr. Lewis, who was on the panel as the mixer-distributor representative, said that the mixer-distributor knows his area, its agriculture, its problems, its people, and that he forms a vital marketing link for the prime producer.

"Why not use this ready-made distribution system?" he asked.

Mr. Coke said that bankers must be increasingly aware of new methods of efficient farm production. In the present cost-price squeeze, farmers cannot operate efficiently by cutting down on fertilizer purchases, he said.

He said that one of the problems, for which he does not have the answer, is that a farmer will borrow money from a bank to buy fertilizer and then will get 30- to 60-day credit from the fertilizer industry.

"From where I sit, I cannot see that a shortage of credit money is affecting credit servicing to agriculture," Mr. Coke said.

Discussion during the panel session centered around the two problems of adequate and sound credit to farmers and marketing channels from producer to farmer.

"There is no substitute for the local middleman," Mr. Monkhouse said during the question and answer period.

Mr. Snyder got the convention business session under way by reciting some of the association activities during the year. He said that the association was trying to represent the entire fertilizer industry, with no lines drawn between the drys and the liquids.

Mr. Bierly, in his annual report, said that the present state of finances for the administrative program is the healthiest in the association's history.

He reported that a flexible product liability insurance program and an executive group life insurance program are now available to members.

Mr. Bierly pointed out that fertilizer use in California in the first six months of 1956 was about 12% higher than during a corresponding period in 1955 and said that total sales in the state this year will be a record one million tons plus. Even bigger sales in 1957 are expected, he said.

M. E. McCollam, American Potash Institute, San Jose, chairman of the association's Soil Improvement Committee, reported that a schedule of salesman and dealer meetings is being planned for 1957. Also in the committee's 1957 plans is a pamphlet on fertilizer application equipment for the West.

The personal relationship between the seller or his representative and the buyer will continue to be the biggest factor in developing the fertilizer market, Mr. McCollam said. Growers must be convinced of the economy of fertilizer use, and the economics of plant food use must be sold through an educational program, he said.

More research is needed in many areas to give growers specific answers to the question of what fertilizer will do under their growing conditions, Mr. McCollam said.

He reported that the Soil Improvement Committee was giving some thought to the employment of an agronomist.

James M. Quinn, California Sun Fertilizer Co., Los Angeles, chairman of the Bankers Information Committee Program, reviewed the work of getting up a brochure on fertilizer use. Mr. Hawkins presented the revised constitution and by-laws, which were adopted. The principal change is to spell out in more detail the responsibilities of the officers and committees.

Mr. Hewitt presented the Admin-

Croplife

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Western states.

CONVENTION SPEAKER SAYS:

Fertilizer Man Is Farmer's Best Friend

"Personally, I think the hope of the world in the future can easily be based on how much and how wisely we use fertilizer on our different crops," is one of many statements made by W. R. Thompson in a talk before the Agricultural Ammonia Institute at Atlanta Nov. 8. It is quite a mouthful, when you stop to think about it, and no doubt has a considerable amount of truth in it.

Mr. Thompson, as a matter of fact, gave the conventioners in Atlanta quite a few thoughtful morsels to mull over. An extension agronomist at Mississippi State College, Mr. Thompson has long been an advocate of greater application of plant food, and speaks from experience. He told the group that he has never studied in any area where nitrogen doesn't pay on all crops except some of the legumes. "And even then, nitrogen is often used to give them a good start. There are many farmers today looking back to their earlier farming experiences and making the comment if they had had the fertilizer then that they now have, people would have traveled long distances to look at the crops they could have produced."

Bringing this matter of greater production into the present-day picture, Mr. Thompson said that "one of the greatest things that has happened to agriculture in the United States is that we have reduced the acres planted to the different crops, but raised the per acre production on all crops. Had reduction of acreages come along without our having fertilizer to increase per acre production, the farmers would have been in serious condition."

"There was a time," Mr. Thompson continued, "when farmers spoke of fertilizer in terms of its cost. Now, they say it pays! This is a complete about-face in thinking. Most crops in America are classified by farmers on the basis of how much money can be invested in them with a return on that investment. When one thinks about a dollar being invested in fertilizer and the return being \$5 in return on crops, it is no wonder that the fertilizer industry can sell its value to the American farmer!"

The speaker also had advice for the fertilizer manufacturer who may feel that he has gone about as far as he can with sales volume in his trade area. "When a fertilizer manufacturer feels down and out and sales are hard to find, if he will just take the acres of cropland in his territory and multiply them by the number of pounds of plant food needed for those crops, he won't wonder if there are potential sales in his area."

If we were to take the average use of just nitrogen on two of the main crops, cotton and corn, he said, a comparison between present use of nitrogen and the amount they actually need for optimum economic production, would reveal some astounding figures.

"Cotton," he declared, "would need over a billion pounds of nitrogen and corn would need 7 billion pounds of nitrogen. Oats for grain, not counting grazing, would need 1½ billion pounds! If farmers in the United States would use the number of pounds of plant food on all crops they could make a profitable increase on, there are not enough figures to put down the results. It would just be too big. The farmer today who would not consider using fertilizer is not only losing a bet on his own farm but making mighty low production, as well. In my opinion, a farmer cannot afford to farm without using fertilizer."

"We make definite, specific statements that if you do not intend using nitrogen on winter grazing don't plant it. Today the American farmer doesn't question that statement. He knows it is a fact."

"One of the crops that will mean more to the American soil in the form of soil conservation in

the future is our pasture crops. Many farmers have already recognized the value of fertilizing pastures and especially the temporary grazing crops that a lot of growth is wanted from. Fertilizer to our pasture crops means almost the same thing that hot houses mean to plants that must be protected from the weather. It just makes the difference between success and failure."

"Many scientists in the United States have given their entire working lives to locating, manufacturing and distributing plant food for the different crops. I don't think anyone has contributed any more to better living than these men who have done this work on fertilizers."

"A fertilizer salesman today has come to be a service man. I don't think there has ever been a fertilizer salesman who has done the farmer an injustice by selling him plant food."

"Today there is more specific information on using fertilizer on the different crops than there has ever been in the history of the world. It is as poor a practice not to use enough fertilizer as to use too much. There are results of thousands of tests to show the farmer just how much fertilizer each plant can use and make a profit from. So far I have not run across a farmer who followed the recommendations based on the results of these tests who has come out dissatisfied."

"Production, itself, is a great help to the American farmer, but there are other things beside production that is a direct result of the wise use of fertilizer. One is the morale of the farmer. I have never yet seen a farmer who made an outstanding yield of any crop who was not only anxious to show it to his neighbors, but to show it to the salesman who sold him the fertilizer. When any practice creates pride in a farmer, it is helping farmers in general."

"I think the fact that fertilizer has the ability to increase production per acre has been one of the chief reasons for the increase in the value of farm land."

"Today farmers are visiting from one area of the United States to another. When they study the different crops in an area, they immediately ask how much fertilizer this crop will utilize."

"I have watched bankers, production credit associations and other lending agencies make loans and have heard them tell farmers many times that if they were not willing to use more fertilizer than they asked for, they were not interested in making the loan."

Mr. Thompson assured fertilizer makers and salesmen that they have a tremendous influence on the farmer and the type of production he gains on his land. After the grower has been sold on the use of fertilizer, he is both proud and prosperous at the end of the year. "From then on, no one has to sell that farmer on using fertilizer," the speaker observed. "They just have to sell him the material."

That doing without fertilizer on a farm is unthinkable, was emphasized by Mr. Thompson. He said that if a farmer and his wife were discussing about what would be the last thing they would give up if such a choice were necessary, he suggested that the wife would be most reluctant at giving up the benefits of electricity. But the farmer, he said, "would immediately say nitrogen and the benefits from it would be the last thing to give up on the farm."

We submit that Mr. Thompson's words should bring cheer and comfort to the fertilizer industry as it looks ahead to next season. The worth of fertilizer and its tremendous potential market is surely a strong hook on which the industry can hang many of its future hopes.



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CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is \$5 for one year (\$8 a year outside the U.S.). Single copy price, 25¢.

LAWRENCE A. LONG

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EXECUTIVE AND EDITORIAL OFFICES—2501 Wayzata Blvd., Minneapolis, Minn. Tel. Federal 2-0575. Bell System Teletype Service at Minneapolis (MP 179), Kansas City (KC 295), Chicago (CG 340), New York (NY 1-2452), Washington, D.C. (WA 82).

Published by

THE MILLER PUBLISHING CO.

2501 Wayzata Blvd., Minneapolis, Minn.

(Address Mail to P. O. Box 67, Minneapolis 1, Minn.)

Associated Publications—THE NORTHWESTERN MILLER, THE AMERICAN BAKER, FEEDSTUFFS, MILLING PRODUCTION

MEETING MEMOS

1957

- Jan. 22-24—California Weed Conference, Fresno Memorial Auditorium, Fresno, Cal. Conference headquarters, Hotel Californian.
- Jan. 10-11—Mississippi Insect Control Conference, third annual meeting, Mississippi State College, State College, Miss.
- June 23-26—American Society of Agricultural Engineers, Golden Anniversary meeting, Michigan State University, East Lansing, Mich.
- Dec. 11-12—Peninsula Horticultural Society, 70th annual meeting, Capital Grange Hall, Dover, Del.
- Jan. 24-25—Illinois Custom Spray Operators' School, Illini Union, University of Illinois campus. H. B. Petty, extension entomologist.
- Dec. 5-8—American Phytopathological Society, 48th annual meeting, Netherland-Hilton Hotel, Cincinnati, Ohio.

EDITOR'S NOTE: Listings above are appearing in this column for the first time this week.

- Nov. 11-13—California Fertilizer Assn., 33rd annual convention, Del Coronado Hotel, Coronado, Cal.; Sidney H. Bierly, executive secretary, 475 Huntington Drive, San Marino 9, Cal.
- Nov. 19-20—Eastern Branch, Entomological Society of America, Hotel Haddon Hall, Atlantic City, N. J.; B. F. Driggers, Rutgers University, New Brunswick, N.J., secretary.
- Nov. 19-20—Ohio Pesticide Institute winter meeting, Neal House, Columbus, Ohio.
- Nov. 27-28—Indiana Fertilizer Conference, Memorial Union, Purdue University, Lafayette, Ind.
- Nov. 28—Oklahoma Fertilizer Dealers Conference, Sponsored by the Oklahoma Plant Food Educational Society, Oklahoma A&M College, Stillwater.
- Nov. 29—Oklahoma Soils and Crops Conference, Oklahoma A&M College, Stillwater.
- Nov. 29—New Jersey Pesticide Dealers Conference, Rutgers University, New Brunswick, N.J.
- Nov. 29-Dec. 1—Washington State College Ground Applicators Short Course, Puyallup, Wash.
- Nov. 30—Seventh Annual South Dakota Fertilizer Dealers Short Course, South Dakota State College, Brookings, S.D.
- Dec. 3—Sixth Annual Minnesota Soils and Fertilizer Short Course, Coffey Hall Auditorium, St. Paul Campus, University of Minnesota.
- Dec. 6-7—Alabama Soil Fertility Society, Whitley Hotel, Montgomery, Ala.
- Dec. 10-12—13th Annual North Central Weed Control Conference, Sherman Hotel, Chicago.
- Dec. 12—American Society of Agricultural Engineers, Power and Machinery Section, in Cooperation with the National Joint Committee on Fertilizer Application, Edgewater Beach Hotel, Chicago.
- Dec. 13-14—Ohio Fertilizer and Lime Conference, State Office Building, Columbus, Ohio.
- Dec. 13-14—Soil Fertility and Plant Nutrition Short Course, University of Missouri, Columbia, Mo.
- Dec. 13-14—Cotton Production Conference, The Titwiler, Birmingham, Ala.
- Dec. 27-31—Entomological Society of

America, Annual Meeting, Hotel New Yorker, New York City.

1957

- Jan. 8-9—Texas Fertilizer Conference, Texas A&M, College Station, Texas.
- Jan. 9-10—Eleventh Annual Wisconsin Insect Control Conference, Sponsored by the Entomology Dept., University of Wisconsin, Lorraine Hotel, Madison, Wis.
- Jan. 10-12—Northeastern Weed Control Conference, McAlpin Hotel, New York.
- Jan. 15-16—Nebraska Fertilizer Institute, Inc., College of Agriculture, University of Nebraska, Lincoln. Howard W. Elm, 917 Trust Bldg., Lincoln, Neb., executive secretary.
- Jan. 21-25—Pacific Northwest Vegetable Insect Conference and Northwest Cooperative Spray Project, Imperial Hotel, Portland, Ore.
- Jan. 23-24—Fourth Annual Pacific Northwest Agricultural Chemicals Industry Conference, Benson Hotel, Portland, Ore., Sponsored by Western Agricultural Chemicals Assn., C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., Executive Secretary.
- Jan. 23-25—Southern Weed Conference, Bon Aire Hotel, Augusta, Ga.; Walter K. Porter, Jr., Agricultural Experiment Station, Louisiana State University, Baton Rouge, secretary.
- Jan. 28-29—National Cotton Council of America, Annual Meeting, St. Louis, Mo.
- Jan. 31-Feb. 1-2—Agricultural Aircraft Assn., Annual Convention, Senator Hotel, Sacramento, Cal.; Wanda Branstetter, Route 3, Box 1077, Sacramento, Executive Secretary.
- Feb. 4-6—Cotton States Branch, Entomological Society of America, Birmingham, Ala. W. G. Eden, secretary-treasurer, Alabama Polytechnic Institute, Auburn, Ala.
- Feb. 19-20—Alabama Pest Control Conference and First Annual Meeting of the Alabama Association for the Control of Economic Pests, Auburn, Ala., W. G. Eden, Alabama Polytechnic Institute, Auburn, secretary-treasurer.
- Mar. 4-5—Western Cotton Production Conference for 1957, Westward Ho Hotel, Phoenix, Ariz.
- March 6-8—National Agricultural Chemicals Assn., Spring Meeting, Fairmont Hotel, San Francisco, L. S. Hitchner, 1145 19th St. N.W., Washington, D.C., Executive Secretary.
- June 9-12—National Plant Food Institute, annual meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.
- June 17-19—Fifteenth Annual Convention of the Association of Southern Feed and Fertilizer Control Officials, Dinkler-Tutwiler Hotel, Birmingham, Ala., Bruce Poundstone, Kentucky Agricultural Experiment Station, Lexington, Ky., Secretary-Treasurer.
- June 26-28—Eighth Annual Fertilizer Conference of the Pacific Northwest, Benson Hotel, Portland, Ore. B. R. Bertramson, Washington State College, Pullman, Wash., chairman.
- July 17-19—Southwestern Fertilizer Conference and Grade Hearing, Galvaz Hotel, Galveston, Texas.
- Oct. 2-4—Eleventh annual Beltwide Cotton Mechanization Conference, Shreveport, La.

Public Law 480 Agreements Pass \$2 Billion Mark

WASHINGTON—Ezra Taft Benson, secretary of agriculture, announced that agreements totaling \$2.2 billion have been signed for export sale of surplus U.S. agricultural commodities under Title I of Public Law 480, the Agricultural Trade Development and Assistance Act of 1954. This represents an increase of about \$1 billion since March of this year.

This law provides for sale of commodities to friendly foreign countries for their currencies, thereby helping meet convertibility and dollar shortage problems and facilitate export of farm surpluses.

"This program has been extremely effective both in reducing our accumulated surpluses of agricultural commodities and in expanding markets abroad for such commodities," Mr. Benson said.

"The program was set up by Congress for three years ending June 30, 1957. The total amount authorized was increased by the Congress to \$3 billion in July of this year. It is expected that the full amount of this authorization will have been committed prior to the end of this fiscal year.

"Aided by Public Law 480 our agri-

AAI MEETING

(Continued from page 7)

an honorary lifetime membership in AAI was awarded to Prof. C. J. Chapman, extension service, University of Wisconsin, Madison. In an impromptu move, members voted lifetime memberships also to Ed Gill, Mississippi Tank Co., Hattiesburg, Miss., first president of AAI, and to Gen. Ralph H. Wooten, Mid-South Chemical Corp., Memphis, retiring president, for their service in getting the AAI started. Plaques were also presented to past presidents of the institute.

Attendance at the meeting was estimated at more than 700 by AAI officials. The afternoon of Nov. 8, buses took a large crowd to the Georgia Experiment Station at Griffin for a demonstration of anhydrous ammonia application equipment.

Companies participating in the demonstration included: John Blue Co., Inc., Huntsville, Ala.; Flo-Mix Corp., Houma, La.; Taylor Machine Works, Louisville, Miss.; Clark Manufacturing Co., Atherton, Mo.; Depth Manufacturing Co., Hindsboro, Ill.; Southeastern Liquid Fertilizer Co., Albany, Ga., and Dempster Mill Manufacturing Co., Beatrice, Neb.

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cultural exports have been able not only to hold their own in the face of increased world competition, but, on a volume basis, have increased 30 percent during the past two years. And these gains appear to be continuing."

The \$2.2 billion of Title I commitments since the fall of 1954 is based on Commodity Credit Corp. value of commodities. It represents over \$1.5 billion export market value of commodities.

A total of 69 agreements has been entered into with 30 countries.

It is estimated that total shipments under the Title I program will be well in excess of \$1 billion, export market value, by the end of this fiscal year. Shipments to date are in excess of \$650 million. Shipments of some commodities will continue during the fiscal years 1958 and 1959 under certain agreements which provide for purchases over two and three year periods.

Agreements which have been signed since July 1 of this year provide for the sale of more than 140 million bu. of wheat, of which 129 million bu. will be exported to India over a three-year period.

The amount of wheat and wheat flour included in Title I, Public Law 480 agreements totals 301,426,000 bu. with a market value of \$491.9 million and a CCC cost of \$871.9 million. Feed grains included in the agreements total 58,225,000 bu. with a market value of \$73.4 million and a CCC cost of \$112.1 million.



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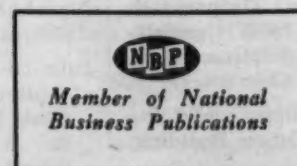
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